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THE CHARGE OF "HUMAN VIVISECTION" AS PRESENTED IN ANTIVIVISECTION LITERATURE *

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In the literature distributed by the American Antivivisection Society at its exhibit held in Philadelphia in the winter of 1913-1914 are many statements of great interest to all who are working for improvements n public health matters, and of vital importance to ery member of a profession which has for its ideal relief or abolition of suffering caused by disease. rief, this literature indicates that the recent activi- of the antivivisectionists are directed not so much nst animal experimentation as against the adoption new methods of scientific procedures in the practice f medicine.

This is evident in (1) the misrepresentation of the medical profession in connection with procedures which the antivivisectionists term "human vivisection," and (2) the apparent cooperation of the American Antivivisection Society with forces opposed to the improvement of the public health.

I. *MISREPRESENTATIONS AS TO "HUMAN VIVISECTION"*

In presenting the evidence bearing on the first of these two points I shall utilize only the literature bearing the stamp of the American Antivivisection Society, the New York Antivivisection Society, the British Union for the Abolition of Vivisection (the British antivivisection society) or the Vivisection Investigation League of New York.

Not all the statements presented in these pamphlets can be traced to their sources, for many of them consist of quotations from the daily papers or from the *Journal of Zoophily* and the *Abolitionist,* and frequently even those quoted from medical journals are given without original sources or are based on a summary of the literature or on some other equally indirect account. As these cannot readily be verified and as Dr. Keen[1] has previously covered the references to foreign literature, I have limited my investigation to references to original papers in American medical publications.

FIVE ANTIVIVISECTIONIST QUESTIONS

In a pamphlet entitled "Human Vivisection" (bearing the name of the New York Antivivisection Society), five questions are asked:

1. Would you like to have your body inoculated with *consumption germs?*

In connection with this question is given a newspaper account (New York *Herald*) of a paper read by Professor Detre of the University of Budapest at the International Tuberculosis Congress in Washington in 1908. The pamphlet states that "he had inoculated nine children in Hungary with a serum he had discovered. He urged further demonstration in the interest of science. In consequence nine charity children suffering from incipient tuberculosis in the Children's Hospital at Washington were selected and germs of both bovine and human tuberculosis were injected."

I have investigated this account through Dr. John F. Anderson of Washington, D. C., director of the Hygienic Laboratory of the United States Public Health Service. From Dr. Anderson's account it is seen that in the first place Detre[2] did not use a serum, and in the second place did not inject the germs of tuberculosis. What he really did was to scratch the skin as in vaccination and apply by von Pirquet's method "old tuberculin," that is, a heated fluid in which tubercle bacilli had been grown, but which is entirely freed from such bacilli.

Dr. Anderson's statement follows:

> Detre's experiments at the Children's Hospital were for the purpose of demonstrating the truth of the claim by him that he could differentiate, by means of a von Pirquet reaction, between infection with bovine and human tuberculosis. The children were not actually inoculated, but the experiments were simply a simultaneous von Pirquet, using at different points old tuberculin made from the human strain and from the bovine strain. . . . The children certainly suffered no ill effects therefrom.

The other reference under this first question is to an investigation in Philadelphia in which tuberculin was used as a diagnostic measure. A sentence runs, "More than half the cases *reacted* (which means they were infected with tuberculosis in a modified form) and some suffered very serious complications. . . ." To the medical man the fact that these individuals "reacted"[3] means that they were suffering from tuberculosis before the use of tuberculin; but to the layman the implication is that the use of tuberculin brought about *de novo* an infection with "tuberculosis in a modified form." It is not stated that in the preparation of tuberculin all tubercle bacilli are destroyed and that therefore it cannot cause tuberculosis; on the contrary, the impression given is that living bacteria were used.[4]

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* Presented at the Tenth Annual Conference on Public Health and Education and reprinted as Pamphlet No. 26 of the Protection of Medical Research series, issued by the Council on Health and Public Instruction of the American Medical Association. Copies can be secured for 10 cents each. This series consists of twenty-six he relations of animal experimentation to vaccination, the live stock industry, tubercu- plague, rabies, surgery, internal secretions, ood, protozoan tropical diseases, etc.

statements on Antivivisection, THE JOURNAL A. M. A., Feb. 23, 1901, p. 500; Misstatements of the Antivivisectionists Again, THE JOURNAL A. M. A., Aug. 10, 1901, p. 400.

[2] See Detre's original account, Proc. Sixth Internat. Cong. Tuberc., Section I, Vol. I, Part I, p. 515.

[3] The word "reacted" as used in medical practice indicates that the result of the test was positive and showed that the individual was suffering from tuberculosis. Thus, when tuberculin is scratched into the skin (von Pirquet method) or dropped on the surface of the eye (Calmette method) a local reddening occurs. This local reaction does not mean that locally, but merely that tuberculosis is p body In the absence of tuberculosis no

2. A second question is: Would you like to have your daughter given the most awful and vile disease known? In their answer to this question nothing is presented which bears on medical practice in America.

3. Would you like your son to be inoculated with scarlet fever or poisonous pus? The reference here is to Dr. J. W. Stickler of Orange, N. J., who is charged with inoculating a little girl of 4 and a boy of 8 years with foot-and-mouth disease and with exposing these children after recovery from foot-and-mouth disease to the infection of scarlet fever. I have examined Dr. Stickler's original report[5] and find that the statement of fact is correct.

4. Would you like to have cancer grafted into your well breast so that it took root there? In their answer to this question, as in the second, no American literature is cited.

5. Would you, a decent woman, after the anguish of childbirth, like to be inoculated by the hospital doctor with loathsome disease, and put with the degraded women suffering these diseases? This question, again, is not supported by reference to American literature. It is, however, as are also the second and fourth questions, put in such a way by an American society as to suggest that the procedures indicated are constant occurrences in American hospitals.

In connection with the second, fourth and fifth questions, no support of the implications is offered, and the data presented in connection with the first question, concerning inoculation with tubercle bacilli, has no basis in fact. In connection with the third only is there an adequate basis in American medical literature, and even in this the question gives a false impression, for the children were exposed to, not inoculated with, scarlet fever. They were, however, subjected to inoculation with material from the vesicles of foot-and-mouth disease. From Dr. Stickler's description it is not clear that he reproduced the disease. Nevertheless it is difficult to excuse such procedures. As the result of his clinical experience Dr. Stickler believed that foot-and-mouth disease protected against scarlet fever, and in an attempt to prove this he made the experiments described. In this his procedure was not different from that of Jenner in connection with cow-pox and smallpox. But our knowledge of the infectious diseases in 1887 justified methods other than those of Jenner. I doubt whether to-day such observations as those of Stickler would receive the support of any reputable physician. Certainly these isolated observations of twenty-seven years ago cannot be taken as a criterion of what would be done to-day in the light of our wider knowledge.

THE ATROPIN-MORPHIN INVESTIGATION

Aside from the matter covered by these five questions, the pamphlet gives three other descriptions of so-called "human vivisection" in this country. One is of observations in a "United States Army Hospital" on the antagonistic action of atropin and morphin. These, it is stated, were made on soldiers, and the criminal character of the procedure lies apparently in the fact, as quoted from the original, that "in no instance were they allowed to know what agents were used, or what effects were expected." The investigation in question is that of Drs. S. Weir Mitchell, William W. Keen and George R. Morehouse,[6] which had for its object the relief of pain in "those terrible cases of neuralgia which, in some shape, are apt to follow as a consequence of neural injuries." These nerve-injuries, it must be understood, were those following gunshot and other wounds of warfare. After trying many drugs it was found that morphin alone in many instances seemed able "to overcome the anguish of certain forms of neuralgic distress." But, although morphin gave relief from the "agony" and "anguish" of these nerve-wounds, it had certain inconveniences, and these, in view of the necessity of administering to some patients as many as from twenty to thirty hypodermic injections a day, became a serious matter. It was in an attempt to overcome them that the investigation of the effect of a combination of atropin and morphin was undertaken. As a result of these investigations the use of atropin with morphin has become a commonplace of therapeutic procedure, and standard tablets containing these drugs are used all over the world with little thought of the clinical difficulties which led Mitchell, Keen and Morehouse to make their original study. As to the charge of experimentation without the knowledge of the patient, Dr. Keen[7] has elsewhere made the following statement:

> Most of our patients operated on (entirely by hypodermic injections) were sorely in need of relief. A few were convalescents. In all cases we avoided telling them what drug was being used, for every one knows how imagination, fear or other emotion would alter the rate of the pulse or of the breathing. Not one man was injured in the least. Not one ever complained.

This investigation constitutes one of the most important pharmacologic and therapeutic contributions in American medical literature. Many thousands of human beings have been benefited and many lives saved through the knowledge thus obtained, but to the opponents of medical investigation it is merely an example of "human vivisection."

OBSERVATIONS OF THYROID EXTRACT IN THE INSANE

Another quotation concerns Dr. Henry J. Berkley c Johns Hopkins Hospital and his observations concern ing the effect of preparations of the thyroid gland o insane patients. He is quoted as saying in regard to th thyroid preparation that "when its administration i pushed even to a moderate degree it almost invariabl results in death," and that "two patients became fren zied and of these one died before the excitement ha subsided." In the opening paragraph of his pape Berkley[8] reviews the current views concerning the clin ical use of thyroid extract, and it is in the second para graph, where he refers to both man and animals, tha one of the foregoing quotations occurs, that is, tha

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[4] For a more complete account of these misrepresentations, see the discussion of tuberculin, later.

[5] Stickler: Med. Rec., New York, Dec. 10, 1887.

[6] Mitchell, S. Weir; Keen, W. W., and Morehouse, George R. On the Antagonism of Atropia and Morphia, Founded on Observa tions and Experiments made at the United States Army Hospita for Injuries and Diseases of the Nervous System, Am. Jour. Me Sc., 1865, L, 67.

[7] Keen, W. W.: The Influence of Vivisection on Characte A.M.A. Defense of Research Pamphlet XXIV, 1912.

[8] Berkley, Henry J.: Studies on the Lesions Induced by th Action of Certain Poisons on the Cortical Nerve-Cells. VII. Poiso ing with Preparations of the Thyroid Gland, Bull. Johns Hopkin Hosp., July, 1897.

"when this administration is pushed even to a moderate degree death is almost invariably the result." This is a general statement based on the literature which has accumulated in connection with the use of thyroid extracts and covers not only clinical but also experimental work on animals. It is not, as is implied in the antivivisection pamphlet, a conclusion based on Dr. Berkley's work.

In connection with the second statement, "Two patients became frenzied, and of these one died before the excitement subsided," the pamphlet does not give the rest of the sentence, "the immediate cause of the exitus being an acute disseminated tuberculosis"; nor does it state that the death occurred seven weeks after thyroid treatment had been discontinued. Furthermore, it does not state that the frenzy may have been a manifestation of mental derangement and not of the action of the thyroid preparation.

Both of these quotations are excellent examples of the way the opponents of medical research *misrepresent* medical literature. It is true that Dr. Berkley's treatment was carried out on insane patients, but he definitely states that the initial treatment was 5 grains daily for three days, then after a certain tolerance had been established 10 grains, and unless the symptoms induced became grave, the dose was increased to 15 grains daily. There is every evidence that in order to obtain information concerning the value of this treatment, as well as its dangers, he used every precaution possible. That many of the patients improved and that two were sent home on this account is not stated by those who quote him. That Dr. Berkley should point out that the treatment may have its dangers does not make it human vivisection. Thyroid gland has been and still is used in medical treatment—and the doses used to-day are as large as or even larger than those administered by Dr. Berkley. Moreover, it may be pointed out that Dr. W. W. Keen called attention to these errors of statement in 1901, as did also Dr. W. B. Cannon in 1911. They have, however, never been corrected. Indeed, this ancient slander of Dr. Berkley has, without the slightest regard for truthful statement or sense of fair play, been repeated within the last few months. It is this disregard of all sense of fairness and decency in connection with the use of Dr. Berkley's report that has opened the eyes of many fair-minded persons to the fact that antivivisection literature is largely a literature of falsehood and misrepresentation.

Only three other American references are given in this pamphlet. One of these, referring to lumbar puncture, I shall discuss later. Of the other two, one is a proposition by the vice-president of a state board of health that the state board of pardons grant the privilege of inoculating convicted criminals with the germs of tuberculosis, and the other tells of a paper read by a physician in Illinois in which the suggestion was made that criminals condemned to capital punishment be turned over to the experimental physiologist.

Neither of these statements need be taken seriously; but even if they do represent the opinion of a few physicians, they differ in no way from the suggestion of one of our local antivivisection leaders (Caroline Earle White), who suggests that in India the *persons condemned* to death as the result of snake-bite be used for experimental purposes. "Here is an opportunity," writes Mrs. White, "such as is not often offered for experimenting upon human beings, since as they would invariably die from the snake bite, there can be no objection to trying upon them every variety of antidote that can be discovered." After all, this suggestion by an antivivisectionist is not very different from the two concerning criminals.

MISREPRESENTATION OF LUMBAR PUNCTURE

Much attention is given by the antivivisection societies at present to lumbar puncture and the serum treatment of meningitis as forms of "human vivisection." This term is one which is very appropriate for any surgical operation on man, but it is difficult to understand how it can be applied to the various diagnostic procedures or curative inoculations, which have developed recently, from which modern medicine has derived so many benefits and on which it bases its hope of future control of the infectious diseases. *In the exhibit of the* American Antivivisection Society is a picture[9] showing a nurse and (presumably) a physician standing one on each side of a table on which a child lies. The physician is *apparently* about to perform the simple procedure known as lumbar puncture, that is, to remove for purposes of diagnosis and treatment a small amount of fluid from the spinal canal. Of the fact that this is the present-day routine procedure in all cases of evident or suspected meningitis, *no mention is made. That on* lumbar puncture depends both the diagnosis and the treatment of meningitis is not even suggested. Thus a humane and life-saving procedure is presented to the thoughtless public as a form of so-called human vivisection.

In the pamphlet of the New York society, previously mentioned, is the oft-quoted statement that "Dr. A. H. Wentworth, Senior Assistant Physician to The Infants' Hospital, Boston, made forty-five vivisections tapping the spinal canals of children, many of whom died." It has been pointed out time and time again that forty-five punctures were made in twenty-seven living and three dead children, and that of the twenty-seven, fourteen died, not at the time or as the result of the puncture, but, as the necropsies showed, and as is stated in Wentworth's paper, from which the New York Society quotes, of definite morbid processes. Dr. W. W. Keen and Dr. W. B. Cannon have called the attention of the antivivisectionists to their unjust and misleading statements concerning these cases, and although one of the members of the American Antivivisection Society has acknowledged that she "unconsciously exaggerated"—she had stated that "every one" of the children died—the story is still preserved in a form which magnifies the number of children and gives the impression that lumbar puncture was the cause of death. And this is done despite the fact that lumbar puncture is now accepted as one of the most important procedures in the diagnosis of acute and chronic cerebrospinal diseases, is essential in the treatment of epidemic cerebrospinal meningitis, is a constant procedure in surgery when spinal anesthesia is desired, and is frequently employed as a method of diagnosis when traumatic injuries of the spine exist.

MISLEADING STATEMENTS AS TO SERUM TREATMENT OF MENINGITIS

In connection with the serum treatment of meningitis a most misleading pamphlet is put out by the American Antivivisection Society. It contains the following:

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[9] The pamphlet reproducing this picture is labeled "Human Material for Scientific Research," and below the picture are the words "Human Vivisection."

> We are indebted to the Vivisection Investigation League of New York for the following refutation of Dr. Flexner's claims:
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> Dr. Flexner of the Rockefeller Institute says of cerebrospinal meningitis that "where 75 per cent. died, now 75 per cent. recover." The New York City Health Department, in *its weekly report, says that there were in Greater New York:*
>
> | | Cases | Deaths | Case Fatalities Per Cent. |
> |---|---|---|---|
> | 1905 .... | 2,670 | 2,025 | 75.8 |
> | 1906 .... | 980 | 813 | 82.9 |
> | 1907 .... | 795 | 652 | 82.1 |
> | 1908 .... | 396 | 359 | 90.6 |
> | 1909 .... | 339 | 330 | 97.3 |
>
> In Greater New York, 24 deaths, January, 1910. The last annual report, 1908, of the New York City Health Department says that "the endemic level as it was previous to the outbreak of 1904 has at last been reached, the death-rate per 1,000 being 0.07 during 1908, which is exactly the same as the death-rate from 1900 to 1903. . . . The disease was apparently more fatal during 1908 than the year before. . . . *The antimeningitis serum was first used in April, 1907.*" [Italics in pamphlet.]

This statement and table give the impression that all the cases included since 1906 in the New York report were cases of epidemic meningitis, and that in all the Flexner serum was used. As a matter of fact the serum was not in general use; but on account of the small amounts prepared in the early period of its clinical application, it was distributed to physicians only on request. Of the cases listed by the health department a comparatively small number received this specific treatment. It is very evident, therefore, that no opinion concerning the efficacy of the serum can be based on the figures of the health department. The average mortality for the 2,510 cases in 1906-1909 as given by the health department is 88.2 per cent.; but in the report (1909) of the first collection of 712 cases[10] actually treated with serum after bacteriologic examination, the mortality was only 31.4 per cent., and in the recent report of 1,294 cases[11] occurring in all parts of the world, the mortality after serum treatment was 30.9 per cent. Moreover, it was shown that when the serum was given on the first to the third days, the mortality was only 18.1 per cent. The value of the specific serum can be discussed fairly only in the light of the later figures. The absurdity of the Vivisection Investigating League's method of juggling statistics is so self-evident that one wonders it should be attempted. It would be as fair to base the mortality following the surgical treatment of appendicitis on the total deaths from appendicitis.

Many other statements are also misleading, as that which states that meningitis "cannot be contagious, as it is merely a possible complication of other diseases." That certain forms of meningitis are complications of other diseases is of course true, but by making the statement the pamphlet implies that epidemic meningitis due to a specific cause does not exist. But more misleading, in view of the remarks on the lack of efficacy of the serum, are the following:

> At this time of year there prevail in many parts of Europe, as of America, epidemics of eruptive fevers such as measles, scarlet fever, influenza, etc., all of a light form.
>
> There were, therefore, selected from among these cases for experimental purposes those which, as they presented certain meningeal disturbances as well as the usual symptoms of measles or of scarlet fever, seemed to justify the title of cerebrospinal meningitis, and they were then inoculated.

To those who have used the serum the falsity of these statements is at once evident when it is recalled that the serum is used only when the meningococcus is found by lumbar puncture, and that when other organisms are found the serum is not used. In this connection may be presented the statement of Dr. Dunn[12] of the Children's Hospital, Boston:

> My personal experience may be cited to illustrate the value, *up to this time, of the general health reports* on meningitis. Outside my regular hospital services, I have been called on to administer the antimeningitis serum in 142 consecutive cases of meningitis which were believed by the attending physicians to be examples of the epidemic disease. On performing lumbar puncture and making bacteriologic examinations, I found that only sixty were cases of epidemic meningitis, while sixty more were cases of tuberculosis, twelve of pneumococcus, six of streptococcus and four of influenzal meningitis. Among the sixty cases of epidemic meningitis in which I administered the serum, there were forty-five recoveries, equaling 75 per cent., while of the eighty-two miscellaneous cases all patients died but one. This experience is by no means unique, but is rather the rule. It is quite certain that all these cases would, under ordinary conditions, have been reported, assuming meningitis to be a generally notifiable disease, as epidemic meningitis; and under these circumstances and in spite of the serum treatment, the records would have shown a mortality of 67.6 per cent. Instead of this the mortality from all the forms together, except the epidemic, should properly have been given at approximately 100 per cent., and of the epidemic disease at 25 per cent.

Other evidence of the same nature is at hand as the result of a special investigation by the New York City Department of Health. July 1, 1910, Drs. Sophian, DuBois and Neal[13] undertook under Dr. Park's direction in the laboratory of the city department of health the study and treatment of meningitis in connection with the preparation and standardization of antimeningitis serum. They were notified whenever a case was reported and communicated at once with the physician in charge, usually making an appointment with him to see the case. The accompanying table shows the result of their study of 180 cases.

Of the first group clinically considered as epidemic meningitis, only about a third, and of the second group, classified broadly as meningitis, only one-ninth could have received the slightest benefit from the specific serum. In the third and fourth groups the serum obviously would not be used. Still it is on the death-rate in the total number of cases thus variously reported that, without regard to the question of exact diagnosis and with absolute disregard of whether or not the specific serum was used, the antivivisectionists would base their claim that this serum is of no value.

Again, in contrast with the New York Society's point of view, is that of Dr. Thomas Morgan Rotch[14] of the Children's Hospital, Boston. During eight years Dr. Rotch had treated meningitis in various ways with a mortality varying from 60 to 80 per cent.; but in the first year (Nov. 1, 1907 to Nov. 1, 1908) after he began the use of the Flexner serum he treated 74 cases, with a decrease in mortality from 80 to 19 per cent.

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[10] Flexner, Simon: The Present Status of the Serum Therapy of Epidemic Cerebrospinal Meningitis, The Journal A. M. A., Oct. 30, 1909, p. 1443.

[11] Flexner, Simon: The Results of the Serum Treatment in Thirteen Hundred Cases of Epidemic Meningitis, Jour. Exper. Med., 1913, xvii, 553.

[12] Dunn, Charles Hunter: Animal Experimentation in Relation to Epidemic Cerebrospinal Meningitis, A. M. A. Defense of Research pamphlet XXI.

[13] Sophian, DuBois and Neal: Studies on Meningitis during 1911, *Collected Studies from the Research Laboratory, Department of Health, City of New York,* 1911, vi, 15.

[14] Rotch, Thomas Morgan: Abstract of Discussion on article by Flexner, The Journal A. M. A., Oct. 30, 1909, p. 1444.

In view of such results the average person of humane instincts wonders whether the money of the Vivisection Investigating League of New York might not be better spent in educating the public concerning the life-saving power of such treatment—and indeed in financing the manufacture and distribution of this serum so that it could be used by every physician in the earliest stages of epidemic meningitis.

STUDY OF 180 CASES OF MENINGITIS

Clinical Diagnoses Reported by Attending Physician	Final Diagnosis Established by Combined Clinical and Laboratory Examination	
Epidemic meningitis, 71 cases	Epidemic meningitis	27
	Tuberculous meningitis	17
	Ac. suppurative meningitis due to:	
	Pneumococcus	4
	Streptococcus	7
	Streptococcus mucosus capsulatus	1
	Influenza	1
	Unidentified Gram coccus (no growth)	1
	Enteritis	1
	Bronchopneumonia	2
	Cerebral endarteritis	1
	Intestinal intoxication	2
	Delirium tremens	1
	Gastro-intestinal acidosis	1
	Measles	1
	Simple chro. internal hydrocephalus	1
	No meningitis (undetermined diagnosis)	23
Meningitis unclassified, 74 cases	Epidemic meningitis	8
	Tuberculous meningitis	10
	Poliomyelitis or polioencephalitis	13
	Enteritis	3
	Bronchopneumonia	11
	Lobar pneumonia	4
	Hysteria	2
	Purpura hemorrhagica	1
	Intestinal intoxication	2
	Cerebrospinal lues	1
	Fractured skull	1
	Spastic paraplegia	1
Tuberculous meningitis, 28 cases	Tuberculous meningitis	23
	Epidemic meningitis	1
	Streptococcus meningitis	2
	Undetermined diagnosis, but no tuberculous meningitis	2
Poliomyelitis or polioencephalitis, 7 cases	Poliomyelitis or polioencephalitis	6
	Epidemic meningitis	1

CRITICISMS OF THE USE OF TUBERCULIN

Another pamphlet of the New York Antivivisection Society with the heading "Vivisectors Clamor for Human Beings to Vivisect" refers to the work of Dr. L. Emmett Holt, at the Babies' Hospital, New York. Sentences are quoted of Holt's study of the various methods of applying the tuberculin test in the diagnosis of tuberculosis. It is difficult to see how these valuable and constantly used clinical tests can be used to support the claim of human vivisection. Only by misrepresentation and by misinterpretation can they be so used. Let me quote from the pamphlet two paragraphs, referring to Dr. Holt's work.

> The ophthalmic test was made 615 times; the skin test of von Pirquet was employed 217 times, also on non-tuberculous and dying babies. As though this useless and cruel torture of ailing children was not sufficient, the puncture reaction was practiced on 130 cases, the result of which was to produce a high fever.
>
> Altogether there were over 1,000 tests made on hundreds of little, helpless children, who may suffer from these injections during their entire lives, yet Dr. Holt is forced to this humiliating admission: "It will be seen that some failures and some unexplained reactions occurred with all of the tests. The results with any test cannot, therefore, be regarded as conclusive."

By writing into the text what they wish to prove they *imply that these tests are fraught with danger and that* the results of such clinical studies are of no value.

An examination of Dr. Holt's paper[15] shows that he does say that "the results with any test cannot, therefore, be regarded as conclusive," but the rest of the sentence, not quoted in the antivivisectionist pamphlet goes on "though a positive reaction creates a very strong possibility that tuberculosis is present. This is increased if the result is confirmed by other tests." In another place Holt says, "While of the greatest assistance in diagnosis, the various tests are always to be taken in connection with the general symptom and the physical signs," and again, "Routine tests proved of considerable value in revealing cases of tuberculosis not hitherto suspected." Referring to the eye test, Dr. Holt says, " . . . in no case was the test followed by any unpleasant results."

Another paper on the use of tuberculin, that by Drs. Hamill, Carpenter and Cope,[16] has likewise been used freely by the various antivivisection societies. References to it appear in three of the pamphlets of the American and in two of the New York Antivivisection Society. In two of the pamphlets of the former society colored pictures of the eye showing the reaction are presented. Two of these pamphlets have the title "Human Vivisection," the third, "Vivisectors Clamor for Human Beings to Vivisect," the fourth, "Tuberculin Tests on Human Beings," and the fifth has the full title of the paper by Hamill, Carpenter and Cope. In one pamphlet occurs the subheading "Experiments on Babies and Little Children" and in another, "Some Recent Instances of this Deadly Work on a Large Scale Follows."

As so much attention has been given by the antivivisectionists to the tuberculin reaction, I wish to go into detail concerning the observations of Hamill and his associates, and for the benefit of non-medical readers to explain the diagnostic procedure known as the tuberculin test. This depends on the principle that if a fluid in which tubercle bacilli have grown, and which therefore contains the chemical products of their growth, is injected into an animal or person suffering from tuberculosis, a transient increase of temperature occurs and constitutes the chief sign of a positive reaction; if no tuberculosis exists, no reaction occurs. The method is therefore of great value as a diagnostic test in obscure or doubtful cases of tuberculosis. Not only is it used in recognizing tuberculosis in man, but it is the constantly and generaly recognized procedure in determining the presence of tuberculosis in cattle.

The fluid injected is called tuberculin, and as it is sterilized it contains no living bacteria and cannot cause tuberculosis. When the test was first used, the tuberculin was injected beneath the skin with the aid of a hypodermic syringe, and the chief reaction which this method gives, is, as I have stated, an increase in temperature. Later it was found that if the diluted tuberculin was placed on the surface of the eye, there followed in tuberculous persons a reddening or congestion of the eye, which might go on to the stage of mild conjunctivitis ("pink eye"). This is known as the Calmette reaction. Still later it was discovered that if the skin was scraped, as in vaccination against small-pox, and the tuberculin applied over such an area, a local reddening—the von Pirquet reaction—could be obtained. There has never been any doubt about the value of the tuberculin reaction. It is one of the most valuable adjuvants in the diagnosis of doubtful tuberculosis. When, however, about six or seven years ago, the medical profession had its choice of three methods of applying the test, it was most important to find out which (1) gave the most constant results, (2) was the simplest to apply, and (3) was accompanied by the fewest disagreeable complications; to determine these points and to establish the best method of procedure was the object of several clinical investigators.[17] The work of Dr. Hamill and his associates constituted one of the earliest of these investigations in this country. Now let us see how this work has been misrepresented. We find the statement "inoculations of tuberculin into children . . . many of the injections being made into the eye." The word "injection" suggests the propulsion of a fluid through a syringe with sufficient force to cause it to enter a tissue or cavity. In the test under consideration the fluid is allowed to drop on the surface of the eye from the ordinary medicine- or eye-dropper. As used, the above-quoted phrase implies that the tuberculin was introduced *into* the substance of the eye and not, as has been explained, dropped on the surface of the eye or inner side of the eyelid.

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[15] Holt, L. Emmett: A Report on One Thousand Tuberculin Tests in Young Children, Arch. Pediat., 1909, xxvi, 1.

[16] Hamill, S. M.; Carpenter, H. C., and Cope, T. A.: A Comparison of the von Pirquet, Calmette and Moro Tuberculin Tests and Their Diagnostic Value, Arch. Int. Med., December, 1908, p. 405.

Another statement is, "More than half the cases reacted (which means they were infected with tuberculosis in a modified form) . . ." The words in parenthesis have no basis in fact. Tuberculin, in that it contains no living bacteria, cannot cause infection, and the reaction which it causes is not "tuberculosis in a modified form." The presence of the reaction merely shows that in the individual tested tuberculosis exists. Lack of knowledge of the principles of bacteriology and immunity may have led the writer of the pamphlet to use this misleading phrase, but as the reaction is clearly explained in the original paper, it appears rather as a deliberate and malicious introduction of false matter. In these various pamphlets it is implied that the investigation was entered on recklessly and without thought of the consequences. In this connection a statement of Dr. Hamill[18] is of interest:

> Before undertaking the work, I went over the available literature and conferred with Dr. ——— to see what information I could get concerning the tests. I knew that ——— had applied the conjunctival test to some sixty cases, and I wanted to know whether he would advise against my undertaking the application of that test to the children in St. Vincent's Home. After warning me against applying it to inflamed eyes or in the cases of children with histories of previous eye trouble, he told me that he thought there was no reason why I should not proceed. I found nothing in the literature at that time that made me feel that there was any impropriety in undertaking the work.

This statement indicates that the investigation was not entered into hurriedly or without expert advice.

In some of these pamphlets it is implied that blindness resulted in some of the cases. For this there is no justification in the paper, for although the investigators state in describing the complications that these "*may* permanently affect the vision and even lead to its complete destruction," there is no evidence that the latter condition resulted. The statement quoted was made for the purpose of emphatically warning physicians against some of the dangers of the test. As a matter of fact, all the eyes cleared up except one in a patient in which a defect of vision of one eye persisted on account of a small corneal scar; in no instance did blindness result.

Although I have been unable to find in any of these pamphlets a statement that these investigations were made without the consent of those in charge of the home, some of the accounts refer to the children as "foundlings, orphans and destitute children," thus implying that they were used without authority. On this point the following statement of Dr. Hamill[18] is of interest:

> I went with Dr. ——— to Sister Marie, the Sister Superior of St. Vincent's Home, and we together explained to her that we wished to apply these tests for the double purpose of determining the incidence of tuberculosis among the cases in St. Vincent's Home and among those being admitted to the home, and at the same time to make a comparative study of the different tests. We were granted permission without any hesitation, and the work was conducted throughout my term of service without the slightest comment on the part of any one. But it was applied only to children in the home at that time. When I returned from my vacation in the autumn I prepared to apply the tests to children who were being admitted to the home, but gave this up after hearing from Dr. ——— that there had been some criticism on the part of the Sisters of the work which had been done.

Again, in referring to an attack made on him by the New York *Herald*, Dr. Hamill continues:

> An interesting sequel to the attack was that Dr. ——— and I were called to the home some months after these publications appeared, to be introduced to the present Sister Superior, who told us that she had sent for me for the specific purpose of telling me how deeply she appreciated what I had done for the home; how intensely she regretted the experiences I had while connected with the home and to assure me that nothing would give her more gratification than to have me reinstated in the institution if opportunity arose. She informed me that she had carefully read the article which I had published, and had seen nothing in it to criticize.

In view of these criticisms of the use of tuberculin by Dr. Holt, Dr. Hamill and others, it is of interest to note that its value as a diagnostic test has been confirmed by federal, state and municipal health authorities, and that it has become one of the most important of modern procedures in medical diagnosis. As to the best method of application there is still some difference of opinion, but the "eye" test has a large group of supporters. Within the last few months Dr. J. Gutman[19] of Brooklyn has stated that the test is safe, very reliable, and absolutely without danger, and serves the purpose as well as, if not better than, the skin reactions. He cautions against its use when any eye-trouble is present, but adds that he does not know of a single case in which the test has proved dangerous.

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[17] Studies for this purpose, other than those of Holt and of Hamill, Carpenter and Cope, that have been quoted at length by the antivivisectionists are Hamman, L. and Wolman, S.: The Cutaneous and Conjunctival Tuberculin Tests in the Diagnosis of Pulmonary Tuberculosis, Arch. Int. Med., May, 1909, p. 307. Taussig, A. E.: The New Conjunctival Test for Tuberculosis, Interstate Med. Jour., 1908, 531. Fisch, C.: The Present Status of Ophthalmic Diagnosis of Tuberculosis, Interstate Med. Jour., 1908, 533. Many others are quoted more briefly. Practically all these point out the occasional danger of the eye-test and thus support the work of Hamill and his coworkers, who were among the first to sound a note of caution. In this way the antivivisectionist literature unconsciously offers a justification for Hamill's studies.

[18] Personal letter.

[19] Gutman, J.: Arch. Diagnosis, 1913, vi, No. 4.

DISTORTED VIEW OF A CLINICAL TEST

The same pamphlet contains also an account of Noguchi's[20] clinical investigation of his luetin test for syphilis, which ends with the statement:

> To the shame of the profession it must be added that physicians connected with twenty-two hospitals in New York City and vicinity contributed their patients to Noguchi for these merciless and unscrupulous experiments.
>
> This base betrayal, on the part of hospital physicians, of a sacred trust would be impossible to any one other than the vivisector and his upholders.

Here again it is difficult to understand how a well-recognized clinical test which aids in the diagnosis of obscure cases of syphilis and which causes no reaction in the non-syphilitic can be used as an example of human vivisection.

Luetin is prepared from the micro-organism—*Spirochaeta pallida*—which causes syphilis. A suspension of this organism is so treated as to cause disintegration of the parasite. The material is then heated so as to ensure the death of all living material in the fluid. Phenol (carbolic acid) is added to prevent contamination, and the fluid — a sterile mixture — is injected into the skin, much in the manner employed in the tuberculin test. It is entirely devoid of living micro-organisms, as was shown by Noguchi, first on rabbits and monkeys, and later by applying it to his own skin and the skin of several physicians who volunteered for that purpose. The reaction in the syphilitic is a slight erythema (or reddening) which may become papular, or occasionally pustular; in the non-syphilitic, *no reaction occurs* and the procedure in such has no more effect than the injection of distilled water would have.

It has been pointed out repeatedly by Dr. Flexner and others that "the application of this test could by no possibility give syphilis to the patient, and, on the other hand, the test has now been used in hundreds of cases all over the world and has proved itself to be of the greatest value in diagnosing, and consequently in treating cases of a dangerous and obscure type." Despite such explanations the misrepresentation of every-day procedures in medicine is continued[21] by these societies in the effort to support a propaganda of cruelty and ignorance.

Of new societies there is no end, but the presence in the community of individuals who will publish statements such as I have quoted suggests the need of a "Society for the Abatement of Preventable Ignorance."

OBSERVATIONS IN CEREBRAL LOCALIZATION

Another pamphlet entitled "Human Vivisection" put out by the American Antivivisection Society quotes several Americans concerning experimentation on animals in its relation to man, but gives no American observations except the Boston cases of lumbar puncture, which I have already discussed, and the study made in Cincinnati, in 1874, on cerebral localization. The latter is described as "one of the most horrible cases of human vivisection in this country, and one, too, which was terminated by the death of the victim." These observations were published under the title "Experimental Investigations into the Functions of the Human Brain."[22] A patient with a loss of a portion of the bony skull was the subject of a study of the reactions following the insertion into the brain of insulated needle electrodes. The Antivivisection Society's report states that "an eroding ulcer had appeared which gradually laid bare the brain substance." It does not state, however, that this eroding ulcer was cancer (epithelioma) of thirteen months' duration, that from the excavation pus exuded, indicating a general suppurative *inflammation* of the dura, and possibly, also, of the finer meninges and the brain, and that at necropsy a thrombosis of the superior longitudinal sinus was found. It is distinctly stated in the original that "as portions of brain substance have been lost by injury or by the surgeon's knife, and the brain has been deeply penetrated by incisions made for the escape of pus, it was supposed that fine needles could be introduced without material injury to the cerebral matter." There is no statement concerning the consent of the patient, but on the other hand there is no evidence that she objected or was coerced or intimidated in any way. In this connection, it is of interest that in the account of Observation 3 (testing of the posterior lobes) occurs the comment, "Notwithstanding the very evident pain from which she suffered, she smiled as if much amused." As the brain is an insensitive organ, the pain mentioned could not have been felt in it as the result of introducing needle electrodes; whatever pain was experienced must have been due to the peripheral effect of the stimulation. That "she smiled as if amused" shows that she did not object, that the pain was not severe and that no harm was done to her.

It is difficult, in view of the incomplete account, to pass judgment on this experience. The case was hopeless from the point of view of treatment—an extensive growth of cancer, a left-sided meningitis, with suppurating sinuses of the brain substance, indicated an early fatal termination.

If the patient under these circumstances consented to the observations described, it would appear to be a matter between herself and the physician making the observations. The symptoms which were present during the three days following the last (fourth) observation would appear to be due to the spontaneous lesions in the brain and not to the experimental procedure. This opinion is confirmed by the necropsy findings.

It is not an uncommon procedure in neurologic surgery to stimulate after operation, in conscious patients, certain areas of the brain. This procedure is a familiar one to all neurologists and it is therefore difficult to understand why so much has been made of these early observations in Cincinnati.

VAGARIES TAKEN SERIOUSLY

Another leaflet of the American Antivivisection Society contains the following:

> I made the experiments on seventeen people between the ages of 15 and 30 years, but in no instance could a case of consumption, scarlet fever or small-pox be produced. These experiments were made in the following manner: I sprayed the poisons of diphtheria, small-pox, scarlet fever or con-

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[20] Noguchi, H.: A Cutaneous Reaction in Syphilis, Jour. Exper. Med., 1911, xiv, 557; Experimental Research in Syphilis, The Journal A. M. A., April 20, 1912, p. 1164.

[21] In connection with the luetin test, quotations are made also from articles by R. B. H. Gradwohl: Med. Rec., New York, 1912, lxxxi, 973; J. M. Wolfsohn: Bull. Johns Hopkins Hosp., 1912, xxiii, 223 and M. Cohen, Arch. Ophth., 1912, xli, 8.

[22] Am. Jour. Med. Sc., 1874, lxvii, 305.

> sumption into the throat or nose or had them breathe them into the lungs, repeating the experiment in most cases every one or two weeks for months, with the result that no disease could be developed. Of course, I could not let the patients know what I was doing. I was supposed to be treating them for catarrh of the nose or throat.

This statement is credited to *Life*, the New York *Herald* and the *Medical Brief* (April, 1906).

I have examined the original article[23] in the *Medical Brief* and find that the quotation is correct; but the paper in question is obviously written by a crank and it is not one from which a wise man would quote, though *Life* might have quoted more freely to the great amusement of its readers. For example, in the fourth chapter of this little effusion of four and a half pages, the writer pays his respects to the Darwinian theory in the following words:

> I will explain one of these wonders in natural phenomena that is a stunner:
>
> Take the human seed germs (spermatozoa), put them upon a plate, first spreading some alkaline nourishing substance upon the plate; for instance, a little soap, place the plate in a room of proper temperature, and in sixteen to twenty-four hours, swarms of ants will be running about. In other words, these living human germs placed under this different condition other than the mother soil, developed into ants. These little fellows can be watched and be seen to gradually develop, and start off on the run.

In Chapter II, this pseudoscientist thus disposes of the physiology of the circulation:

> These experiments positively refute the assumption made by physiologists that the heart and muscular contraction of the arteries cause the blood to circulate in the body. They also prove that the circulation of the blood is governed by this law of attraction affinity, electricity, or call it what you will.

It is from Chapter III, entitled "No Impurities, Poisons or Germs can be taken into the Blood or System from Our Surroundings," that *Life*, the *Herald* and others have quoted. Immediately following the paragraph they quote, is the following explanation:

> I want here to call attention to the fact that I did not make cultures of these poisons and germs, which is now considered so scientific, but in reality is unscientific and misleading. I used the genuine stuff, directly from the patients, sometimes carrying quantities of small-pox and scarlet-fever scales in my pocket for months.

That this individual actually lived in this twentieth century and said he did many of the things he describes is undoubtedly true, for it is known that he went to one of our larger mid-Western cities and asserted that he had smeared himself with small-pox pus. Although he might have been held, through a liberal interpretation of the law, on the charge of carrying concealed deadly weapons, he was instead sent to the isolation hospital, where he and his clothes were disinfected and where he was kept isolated for a period of two weeks.

His books ("As It Is" and "Fads in the Practice of Medicine") show this individual to be without medical training in the modern sense. One of his letters to the commissioner of health of Milwaukee, as quoted by Dr. Forbes,[24] is illuminating as to his standing with medical editors. He writes:

> I will admit that the *Medical Journal* would be the proper place for the discussion of these subjects, but I wish to inform you that for nearly six years that privillege has been denied me by nearly forty publications in the United States.

Some idea of his success as a practitioner may be gained from the fact that in a period of eight or nine years he tried to earn a living in four or five different places.[25] It is said that it was on account of his lack of practice and therefore his inability to do harm that he was not prosecuted for malpractice.

I have gone into this account somewhat in detail in order to show the non-science and indeed the utter nonsense which the antivivisectionists utilize in their attempt to oppose the progress of modern medicine. The individual under consideration may have attempted to introduce the materials he mentions into the respiratory passages of his patients, but to quote the acts of such a person, of unscientific training and apparently of unsound mind, as representative of the general practitioner, is as outrageous as were the stated inoculations.

WORKS OF KNOWLES AND HALES

Another account in a pamphlet of the American Antivivisection Society is that which refers to Dr. Knowles' observation on molluscum contagiosum.[26] In the course of an epidemic of this disease at St. Vincent's Home (Philadelphia) during the year 1908, fifty-nine children were affected. In the hope of obtaining some knowledge concerning the causation and development of the disease, facts essential to its radical control, attempts were made to reproduce the disease in two children by rubbing the contents of the local lesion on an abraded surface. Molluscum contagiosum is a simple local condition in no way serious in its manifestations or consequences. Several physicians, among others, Retzius and Haab, have reproduced the disease on their own bodies. That Dr. Knowles should desire to repeat these experiments is, under the circumstances, hardly a matter for severe criticism.

The pamphlet of the British Union ("Experiments on Human Beings," by R. E. Dudgeon, M.D.) contains no reference to American and indeed none to English hospitals or physicians. Lawson Tait is quoted, and reference is made to Rev. Stephen Hales as "the originator of the modern practice of vivisection"; and it is recalled that this clergyman published a work on "Hemostatics," based on his observations on blood-pressure in the horse and other large animals. The fact is ignored that to-day every physician who practices accuracy of observation uses instruments which in their development go back to Hales' observations. It is cited that on the basis of these observations Hales obtained the approbation of the Royal Society, and that the society published his observations and made him one of its fellows. The account concludes, "His experiments have been utterly valueless as far as the health or life of human beings is concerned." It is of course possible that apparatus for taking blood-pressure would have been developed in any case, but it cannot be denied that Hales' experiments initiated and hastened this development.

VAGARIES OF RODERMUND AGAIN

It is of interest that the "Society for the Prevention of Abuse in Animal Experimentation," although it states in its "platform" that it regards "the abolition of vivisection as disastrous to legitimate scientific research,"[27] makes use of the same unfair and misleading methods as do the antivivisectionists who demand total abolition. It repeats *Life's* quotation about the spraying of the poison of scarlet fever, diphtheria and small-pox into the throats of patients, as do the American, New York and other antivivisection societies, without regard to the other absurd statements elsewhere in Rodermund's paper, which, if mentioned, would nullify, as they must realize, the importance of the part actually quoted. Their plea,[28] "We, the friends of vivisection, who desire to see it placed in the keeping of the most competent men, who are determined to take it altogether out of the hands of charlatans and tyros, have a right to ask a reconsideration on the part of the medical profession," is hardly convincing in view of the fact that they quote in support of their position a man discredited by the medical profession itself. This society, like the frankly antivivisection societies, makes much of what it considers to be experimentation on patients in hospitals. In a circular letter, under date of Jan. 2, 1914, over the names of the president (J. B. Y. Warner) and treasurer (Frederick P. Bellamy), it is stated, in referring to a new method of diagnosis, that "this is the natural sequence of unlimited animal experimentation. *Every physician in large practice knows this to be the fact.*" [Italics in original.]

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[23] Rodermund, M. J.: Medical Wonders and Medical Blunders —a Story of Facts, Med. Brief, 1906, xxxiv, 279.

[24] See letter of Alexander Forbes, Life, May 26, 1910.

[25] Personal letter from a Milwaukee physician.

[26] Knowles, F. C.: Molluscum Contagiosum, Report of an Institutional Epidemic of Fifty-Nine Cases, THE JOURNAL A. M. A., Aug. 28, 1909, p. 671.

In this connection, we have the opinion of one of the most prominent of European physicians, Dr. Joseph Bastianelli of Rome. After a prolonged visit to this country, devoted to a study of the methods of teaching and investigation in our hospitals, Dr. Bastianelli gratuitously offers the following:

> Concerning the American hospitals, I am bound to say that every phase of the process of receiving and treating of a patient is characterized by strong sentiment and human sympathy. Patients are held as sacred. Everything is done to help them, regardless of creed and nationality. The hospitals are the best in the world, for rich and poor alike are cordially welcomed.

II. COOPERATION OF THE ANTIVIVISECTIONISTS WITH THE ANTIMEDICAL MOVEMENT

This brings us to one [illegible] nection with the recent [illegible] dence of the apparent cooperation of the antivivisectionist forces with an organization having for its object opposition to the federal control of matters of public health. Among other literature on the tables at the exhibit (Nov. 29 and Dec. 13, 1913) of the American Antivivisection Society were the publications (*Medical Freedom*, i, No. 2, and ii, Nos. 8 and 10) of the National League for Medical Freedom. These state that the object of the league is to "protect the people in one of their most sacred rights, the right of every man to select the practitioner of his choice in the hour of sickness"; but its real object, as is evident elsewhere in its pages, is to oppose the control by the federal government of matters of public health.

This is particularly emphasized in a pamphlet bearing the card of the National League for Medical Freedom, entitled "Evils of a Health Bureau," which attacks the American Medical Association and Senator Owen's bill to establish a national health board.

That there may be no doubt concerning the policy of the National League for Medical Freedom, let me quote from a leading article[29] by a director (William A. Davis) of the league. He says:

> The greatest menace to the freedom of the people of the United States to-day is the activity of that portion of the medical profession which is attempting to establish a national Department of Health, with its chief executive officer a member of the President's cabinet, under the specious plea of advancing the "public health." . . . Its members are asking to establish a medical monopoly whose bands of iron have not been equaled since the dark ages.

In another number[30] Dr. Samuel G. Dixon, the head of the health department of the State of Pennsylvania, because he stated in an address that "compulsion, not persuasion, is the key-note of state medicine," is described as "the head of the paternalistic medical activities of Pennsylvania and a master spirit among the political doctors of the American Medical Association. . . ."

In other words, the league is opposed to government bureaus which might have charge of quarantine, health legislation, the control of water-supplies, sewage-disposal, pure-food regulations, and other problems which would thus have federal regulation and uniform enforcement. No matter what views one may have about states' rights or schools of medical practice, no one, I believe, who has the welfare of his fellow men at heart, desires to oppose regulations which tend to decrease disease in his own community or in that of his neighbor. The opponents of animal experimentation by distributing the literature of the League for Medical Freedom indicate that they are opposed to such humane effort and thus offer added proof of their opposition to the principle that the community at large should benefit by the fruits of medical investigation.[31]

I have gone into these matters in details for two reasons: First, that the medical profession should understand the animus which actuates such attacks, and secondly, that the general public should have a clear statement concerning the misrepresentation on which these attacks are based. "The public should definitely understand that the medical profession wholly repudiates and regards with abhorrence the employment of any procedure whatever which is in any way likely to injure rather than to benefit a patient who has entrusted himself, or who has been entrusted, to a physician's care."[32]

The antivivisectionists charge that in experimental work the final test must be made on man. Of course it must. The object of all medical investigation is the relief of mankind's suffering from disease. After a method has been satisfactorily tested on animals, the final test must be on man, otherwise the preliminary work would have been without purpose. But in these first crucial tests on man the greatest caution is observed and it is usually the investigator himself who submits to the test. This was the case with Noguchi, who has been maligned by the antivivisectionists in

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27. Pamphlet of the society.
28. From a pamphlet over the signature, "James H. Ecob" put out by the society.
29. Davis, W. A.: Med. Freedom, ii, No. 10.
30. Med. Freedom, ii, No. 8.
31. It is significant that the *Medical Brief*, from which all the Antivivisection societies and the "Society for the Prevention of Abuse in Animal Experimentation" quote concerning the experiments of Rodermund on the spraying of poisons of scarlet fever, diphtheria, small-pox, etc., is controlled by one Henry R. Strong, who also publishes the *National Druggist*. Both these publications have for years been regarded as mouthpieces of the nostrum interests. The *Medical Brief* does not in any sense represent the views of scientific medical men.
32. The Washington Antivivisection Congress, editorial, THE JOURNAL A. M. A., Dec. 20, 1913, p. 2244.

connection with his luetin test. Before this test was put into general use Noguchi and other physicians who volunteered were subjects of experimentation. So also when salvarsan was first suggested for the treatment of relapsing fever; after tests had been made on dogs the assistants of Alt volunteered to take the injections in order to test the toxicity for man. Not until after this was done was it used on patients with relapsing fever, and of course later in syphilis.

This is the universal rule. As long as the problem at hand offers hope of solution by the use of animals, this procedure is followed. But once it is evident that man himself must be the experimental animal, the scientist volunteer is always ready. When it was evident that the problem of yellow fever could be settled only by the demonstration of the direct transmission of the disease from infected man to healthy man by the bite of the mosquito, Carroll and Lazear and soldier volunteers gave themselves willingly to the test. Lazear succumbed, but to the world was given the means of preventing the scourge of yellow fever. "Died in the service of his country" is the simplest phrasing which any people may use to honor its heroes; but to Lazear, as also to Ricketts, whose fatal illness was due to Mexican typhus which he was investigating, were given the immortal honor of dying in the service of humanity.

So also when in the course of the study of the transmission of malaria by the mosquito, the crucial test became necessary, two members (the younger Manson and Warren) of the staff of the London School of Tropical Medicine were ready to submit to the bite of infected mosquitoes brought from the Roman Campagna for that purpose.

This voluntary service of man is not limited, however, to the acute infectious diseases. It must be remembered that Henry Head's important studies of sensory disturbances due to nerve injury were based in part at least on a purposeful division of a nerve in his own arm, and aside from these major problems there are many minor problems in connection with which the investigator is himself constantly the subject of experimentation. These are instances in which the physician tests on himself a new procedure before he applies it—contrary to the contention of the opponents of medical research—to patients. Within the last two months two different clinical applications of experimental work have been tested thus by physicians in my department, and one of them not without severe results. Moreover, a vast number of experiments in physiologic chemistry and immunology are made with the investigator himself as the experimental animal.

I can recall that when the tuberculin eye-test (ophthalmic reaction) for tuberculosis, for the use of which some Philadelphia physicians have been severely criticized, was first announced, I and the staff of my laboratory (Bender Hygienic Laboratory, Albany, N. Y.), submitted to the test before using it on patients. Of the fourteen men, all physicians, to whom the test was applied, four had a positive reaction, that is, a congested or inflamed eye. These men did not look on this as a hardship, but rather were thankful that this evidence of latent or obscure tuberculosis somewhere in their bodies warned them of the necessity of care and appropriate treatment in preventing its further development.

Three courses are open to the medical profession:

1. To refuse absolutely to try any new drug, new operation or new means of diagnosis, because it would be an "experiment" and an example of "human vivisection."
2. To test new ideas, suggestions and methods at once on man.
3. To make the first tests and experiments on animals and then if found useful and not dangerous to apply them, with every possible safeguard, to the relief of man.

If the first course were followed, all progress would cease and all medical and surgical treatment would become stereotyped. The second involves a moral responsibility which few conscientious physicians would care to assume. The third has a basis in a definite ethical principle. Which would any sensible man or woman choose as a guide to medical progress?

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AN ECONOMIC VIEW OF VENEREAL INFECTIONS

JAMES PATTERSON, M.D.
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There is no subject of more vital importance than that of venereal infections and means of combating them. We have come to a point where such freedom of discussion is possible as was unthought of a few years ago, and is it not now advisable to add some more definite straightforward action in ridding mankind of these avoidable infections?

The prevalence of the scourge is known in a general way, but it can do no harm to look again at some figures showing approximately the wide-spread more or less hidden conditions. The army hospital reports of the various nations are the most readily available and from them White and Melville[1] have compiled a table (Table 1) showing the incidence of infection per 1,000 men.

TABLE 1.—VENEREAL INFECTION PER THOUSAND MEN

	Years	Per Cent.
Germany	1905-06	19.8
France	1906	28.6
Austria	1907	54.2
Russia	1906	62.7
United States	1907	167.8
United Kingdom	1907	68.4

Kober[2] gives a somewhat more recent and a more differentiated table (Table 2) also on the basis of 1,000 men.

TABLE 2.—DIFFERENTIATED INFECTIONS PER THOUSAND MEN

	Year	Syphilis	Chancroid	Gonorrhea	Total
U. S. Army	1909	30.45	30.77	135.77	196.99
U. S. Navy	1909	26.49	28.23	105.11	159.83
Japanese Navy	1907	.....	.....	......	139.75
British Navy	1908	37.46	17.87	67.16	122.49
British Army	1908	35.1	28.23	40.7	75.8
Japanese Army	1907	10.1	10.4	17.1	37.6
Prussian Army	1907	4.4	2.1	12.2	18.7

These tables show conclusively that the English-speaking people are, in their naval and military organizations at least, much greater sufferers from venereal infections than the other nations.

In civil life there is less accuracy in presenting figures, but Cunningham[3] says that 60 per cent. of men acquire venereal infections some time, 20 per cent. of these are incurred before the twentieth year, 50 per cent. before the twenty-fifth year, and 80 per cent. before the thirtieth year. Gerrish[4] estimates that 10 per cent. of the population of New York has syphilis and that 80 per cent. of it is acquired between the ages of 19 and 35 years. Fischer[5] thinks 18 per cent. represents the luetic cases in the United States and he further states that there are 250,000 deaths each year due to venereal infections. Biggs[6] finds that during the year 1912 there were 13,348 cases of syphilis reported, 24,980 cases of gonorrhea, and 4,331 cases of chancroid, a total of 42,659 venereal infections. These were reported by 1,500 of the 8,000 physicians in New York City, and do not include hospital and dispensary figures. His judgment is that there were about 200,000 cases during the year. McMurtrie[7] places on record statistics from seventeen dispensaries and thirteen hospitals for the year 1911. In the former he found 15,781 venereal cases and in the latter 5,380. The 5,380 means 6.33 per cent. of all the cases in the hospitals investigated and that is the more notable because of the very scanty hospital accommodation for such diseases. Morrow,[8] in his reply to Cabot's criticism of the estimates he gave as to the frequency of venereal infection, reiterates his statement that 75 per cent. of adult males acquire gonorrhea at some time, and that from 5 to 10 per cent. acquire syphilis. He bases his figures not only on his own observations, but on the opinion of such men as Neisser and Fournier, and on the statistics found in the clinics and dispensaries of continental Europe. In this connection he calls attention to the unreliable reports furnished by our hospitals because cases of the primary diseases are not admitted, and only in the practically incurable stages are venereal cases given housing under such titles as arthritis, prostatitis or endometritis in gonorrheal patients and general paresis, tabes dorsalis, aneurysm and so forth in specific cases. Again Barrett[9] presents some evidence furnished by the pathologists of Melbourne, Australia, where 30 per cent. of 200 necropsies gave syphilitic findings. Besides that, 5 per cent. of the population within a ten-mile radius from the Melbourne post-office were positive to the Wassermann test. These findings can be multiplied by further reference to the literature, but they are ample to indicate the extent of the scourge.

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[1] White and Melville: Lancet, London, 1911, ii, 1615.
[2] Kober: Tr. Assn Am. Phys., Philadelphia, 1911, xxvi, 155.
[3] Cunningham: Boston Med. and Surg. Jour., 1913, lxviii, 77.

This subject can be looked at from another angle. Morrow[10] quotes Osler as estimating that between 6,000 and 7,000 persons succumb to syphilis each year in England and Wales, and that is not including stillbirths, the larger proportion of which are due to lues. In fact, Osler puts syphilis in a class next to tuberculosis, pneumonia and cancer as a death-dealing agent. Then Mattauschek and Pilcz[11] find that of 4,134 officers of the Austrian army who contracted syphilis between 1880 and 1900, twenty died from the disease, 198 have general paresis, 113 have locomotor ataxia, 132 have cerebrospinal syphilis and of this latter number 80 are insane. Of course, many have died of intercurrent disease, but even considering that the conclusion reached in this investigation is that 14.64 per cent. of these better-class men are dead or disabled as a result of syphilis. Gonorrhea is not considered so malignant by the general run of men, but Morrow[8] assures us that 80 per cent. of deaths from infections peculiar to women are due to gonorrhea. Were it not for that disease the gynecologic departments of the hospitals might be almost done away with, for from 75 to 80 per cent. of all operations on the female genital tract are necessitated by gonorrheal infections.[12] In addition to that, it is no small factor as a crippling agent. Cunningham[3] and Kober[2] are of the opinion that 10 to 30 per cent. of neisserian infections give rise to arthritis. So then, in spite of popular opinion to the contrary, the four or six weeks' duration of an acute gonorrheal urethritis is a very serious matter. And then either disease may be acquired innocently—not only by ignorant wives who are the greatest sufferers from the gonococcus, but by fellow-workers, or even more casual associates of the carrier of the *Treponema pallidum* — the organism of syphilis. The crusade against the public drinking-cup has called attention to the possibility of transmitting syphilis through its agency and it is a well-known fact that the disease has been spread by glass-blowers' instruments. But the epidemic described by Schamberg,[13] where nine people were infected with syphilis on account of the kissing proclivities of a young man with a chancre of the lip, should have been startling enough to beget immediate action.

The direct financial loss entailed has not been computed, but it could be approached from the proportion of taxes used in caring for our defectives, who are frequently the result of congenital lues, or for our insane or blind. A conservative estimate puts 10 per cent. of the insane in the Massachusetts asylums down to syphilis, and the yearly cost of their maintenance is $300,000.[3] Ophthalmologists assert that next to refractive errors, venereal infections are the most fruitful source of defective vision. Rosenstein[2] ventures the opinion that 20 to 25 per cent. of the inmates of our institutions for the blind are the result of gonorrhea alone.

Then there is the loss that can only be guessed at in the reduced efficiency of business people from the acute infections, from the rheumatisms, and from the mental and physical weakening caused by the late lesions of syphilis—before the patient is compelled to give up trying to work. Not only that, Knapp[14] suggests that the notable loss of life and property in railway accidents each year is partly due to syphilis, basing his conclusion on the finding of nine railway employees among 263 cases of general paresis in the Massachusetts hospitals for the insane in April, 1907. One of these men —an engine driver—had been "queer" for a year before his incarceration and had on one occasion finished his run several minutes ahead of time. Camp,[15] pursuing a similar line of investigation, found thirteen railway men among eighty-seven cases of general paralysis in the state hospital at Kalamazoo, Mich., between July, 1910, and February, 1913.

Besides that, there is the absolute loss of time to industry by people in their earning years. Here again the accurate statistics from the various branches of the service are readily available and are summarized by Surgeon-General Rixey in his report for 1909 in the statement that the disability from venereal infections if applied to the force afloat would have rendered entirely inactive for over a month, three battle-ships with a complement of one thousand officers and men each. Table 3, taken from five of our leading hospitals in Chicago, shows a rather concrete loss in the matter of time spent in the hospital by people of earning years and rank.

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[4] Gerrish: Social Diseases, New York, 1911, ii, 1.
[5] Fischer: Public Health, Mich., Lansing, 1913, viii, 51.
[6] Biggs: N. Y. Med. Jour., 1913, xcviii, 1009.
[7] McMurtrie: Med. Rec. N. Y., 1913, lxxxiii, 970.
[8] Morrow: Boston Med. and Surg. Jour., 1911, clxv, 520.
[9] Barrett: West Canada Med. Jour., 1913, vii, 164.
[10] Morrow: New York Med. Jour., 1911, xciv, 129.
[11] Mattauschek and Pilcz: Med. Klin., 1913, ix, 1514.

[12] Rosenstein: Med. Rec. New York, 1913, lxxxiii, 467.
[13] Schamberg, J. F.: An Epidemic of Chancres of the Lip from Kissing, The Journal A. M. A., Sept. 12, 1911, lvii, 783.
[14] Knapp: Boston Med. and Surg. Jour., 1908, clviii, 187.
[15] Camp, Carl D.: Epilepsy and Paresis in Railway Engineers and Firemen, Journal A. M. A., Aug. 30, 1913, p. 655.

TABLE 3.—LOSS OF TIME IN HOSPITAL

Hospital	Year	Gonorrhea No. Cases	 Days Lost	Syphilis No. Cases	 Days Lost	Chancroid No. Cases	 Days Lost
Presbyterian	1911-12	18	753	46	961	0	0
St. Luke's	1912-13	11	142	52	593	0	0
Wesley	1912-13	4	39	151	1,562	0	0
Michael Reese	1912-13	10	161	107	1,066	0	0
Cook County	1912	463	5,742	917	19,389	150	1,658

These figures include under syphilis, general paresis or dementia paralytica and locomotor ataxia or tabes dorsalis, which have been definitely proved to be specific by the demonstration of the spirochetes,[16] and do not include aneurysms, 60 to 80 per cent. of which are generally conceded to be luetic. Neither do they include the cases of cerebral thrombosis and hemiplegia, which in a large percentage of cases are undoubtedly syphilitic. And let me repeat that these days lost are lost by people who should be producing. They do not include congenital syphilis, gonorrhea in children, or the cases listed in our hospitals under gynecology.

These, then, are the conditions. Now what has been done in combating the plague? The frequently quoted scheme of continental Europe, which is to license prostitutes, and by periodic examinations see that they are clean enough to practice their calling, is of no value. In the first place, it is too unjust to be considered. The organisms of these diseases are rarely carried from one woman to another except by the mediation of the male host. And when one whore serves an average of twenty men in one day,[17] what possible chance is there of keeping her clean by weekly or fortnightly examinations? Besides, the scheme has been discredited in the countries of its inception. In 1860 there were 200 licensed houses of prostitution in Paris, which now has less than fifty,[1] and authorities there admit that the great majority of infections come from clandestine prostitution, which is practiced for many days before the woman is forced into the open pursuit of her calling. Then, again, the reports from the recruiting stations in cities in which regulated brothels exist, compared with those in which the bawdy houses are not regulated, show definitely that the incidence of infection among enlisted men is not a good index of the prevalence of the diseases among civilians. For example, in Berlin 7.66 per thousand were rejected because of venereal infection, whereas in London 5 per thousand were rejected for the same reason. This is the more noteworthy when we remember that the Berlin men are compelled to serve in the army while the enlistment from London is voluntary. And so it is evident that the unfair regulation of a small minority of infected folks is worse than useless.

Education is being strongly advocated and is of undoubted advantage. But education alone will not suffice, as witness the condition cited among the Austrian army officers and also the fact stated by Willson,[18] in the discussion of his paper, that the medical students furnished a larger percentage of venereal infections than any other student group at the University of Pennsylvania. All the same, honest education of all classes will in time, work a tremendous change.

Another plan is that of putting these infections on the notifiable list as is done in Denmark. This scheme is properly urged by many writers. Utah has adopted such a law.[19] So has the city of New York. In the latter place, as has been pointed out, only fifteen hundred of the eight thousand physicians were interested enough to report cases, and besides that, the members of the managing boards of three of the big hospitals went to the mayor to get him to rescind the action of the Board of Health (Biggs[6]). So it appears that this very sensible procedure has much to overcome in the way of inertia as well as active opposition before it becomes universal. But it will be adopted sooner or later, and as showing which way the wind blows the Social Service Committee of Canada[20] has presented resolutions to the government asking for notification of venereal diseases. Turner[21] goes further and urges compulsory restraint of refractory cases until they are no longer a source of danger, while others there advocate the examination of all people arrested for any cause and the regulation and treatment of infectious cases until they are clean. These are all good ideas. The problem is a large one and must be approached from all sides. Of course, we must have education; we must also have notification of cases, preferably by name, but by number certainly if the other method is impracticable. And we must have absolute suppression of commercialized prostitution—not for the purpose of increasing morality, because there will be more or less promiscuous sexual intercourse as long as men and women live—but for the stamping out of known plague spots. And this is not impossible of accomplishment in a determined community, for apparently Iowa with its injunction and abatement law has the solution.[22] And we must also urge the young man to marry early — to face economic conditions as they are and pit his youth, enthusiasm and sense of responsibility against them. These are all good general measures and will in time help to eliminate the diseases.

But the most crying need is provision for effective treatment of all cases. Physicians and laymen too long have regarded these infections as disgraces and not as diseases. They cannot be cured by ignoring them. In the city of New York in 1908 there were 150 beds for venereal patients, and Goldwater[23] thinks the conditions little improved even now. Biggs, however, succeeded last year in getting the Board of Estimates to provide for a pavilion at the Riverside Hospital for the isolation and treatment of cases needing such care. In Chicago we have only 125 beds available at present. Now, a gonorrhea, when acute, is curable in all but a very small percentage of cases (3 per cent., according to Kober), but when it comes for treatment as arthritis or endocarditis it is practically impossible to provide any material relief. Syphilis also is curable in the great majority of cases if vigorous treatment is persisted in for a long enough period.[24] But when it appears for treatment in the form of general paresis, locomotor ataxia, aneurysm, cerebral thrombosis or what not, it can perhaps be arrested, but usually it means death in a relatively short time (three to five years), with more or less complete disability in the meantime. Camp[14] suggests for the advantage of railways and the traveling public that there be periodic examinations of railroad employees by competent neurologists for the purpose of finding the indications of late syphilis in the nervous system. That is commendable, but why not look for the syphilis when any practitioner can identify it, and by compelling the infected individual to take proper treatment absolutely prevent the later manifestations of the disease? We have in the complement-fixation test a proof that is more conclusive than anything yet found to tell us when a patient is free from the gonococcus. And in the Wassermann tests we have a reliable index of the presence or absence of the *Treponema pallidum*. The Lange gold colloidal test of the cerebrospinal fluid is perhaps even more conclusive when the central nervous system is involved.[25] What we need, then, is proper hospital and laboratory facilities for the treatment and cure of active cases. And with reasonable cooperation these infections can be made as scarce as small-pox in one generation.

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[16] Noguchi and Moore: Jour. Exper. Med., 1913, xviii, 232.

[17] *The Social Evil in Chicago, Chicago.* 1911, pp. 99 and 114.

[18] Willson, Robert N.: *The Eradication of the Social Diseases in Large Cities*, abstr., The Journal A. M. A., Sept. 21, 1912, p. 929.

[19] Bogart: Am. Jour. Dermat. and Genito-Urin. Dis., St. Louis, 1912, xvi, 23.

[20] The Journal A. M. A., Oct. 11, 1913, p. 1387.

[21] Turner: Austral. Med. Gaz., 1911, xxx, 650.

[22] Hallam: Social Diseases, 1912, iii, No. 2, p. 27.

[23] Goldwater: New York Med. Jour., 1913, xcvii, 1016.

[24] Collins, Joseph: Syphilis and the Nervous System, The Journal A. M. A., Sept. 13, 1913, p. 860.

A great many corporations have a medical staff to care for their employees and to add to their efficiency. There is a notable economic waste due to the venereal diseases shown in the foregoing figures, and it would seem advisable to direct the attention of these medical departments to the detection and care of cases of this kind for the sake of promoting efficiency, not only during the acute stages, but also to prevent the later disabilities which come on when an employee has been long trained and should be of most value to the firm. The way in which this can best be accomplished must be worked out by each organization and its medical staff. Obviously the easiest way to begin such a campaign is to examine all new employees for evidence of disease and to question them as to past infection. In that way acute cases can be found and dealt with, and a premium will be put on denying the existence of any venereal lesion. Then quite a large number of quiescent cases of gonorrhea could be discovered by examining the prostatic fluid for the gonococcus. But the surest and most satisfactory plan would be a serum test for both gonorrhea and syphilis. Dr. A. M. Moody, pathologist at St. Luke's Hospital, tells me that a serum-testing laboratory can be equipped for first-class work for about $400 as follows:

Centrifuge	$100.00
Incubator	50.00
Hot-air sterilizer	50.00
Ice-box	25.00
Cages	50.00
Animals: 12 guinea-pigs, 2 rabbits, 3 hens	15.00
Glassware, racks and baskets	15.00
Miscellaneous expenses	100.00

And that surely is not a prohibitive figure.

Then a number of business houses have mutual benefit associations. Employees applying for membership could be examined for venereal as well as other disease, and so not only would there be a check on new employees, but also on older members of the working force. And it would be well to ask prospective members of such an association to waive claim for any disability due to venereal infection, whether or not they were found clean. In fact, life and benefit insurance companies in general must see that their insured are much better risks when free from venereal taint. Serum tests ought to be part of the routine insurance examination, and premiums should vary with the results. Men frequently increase their insurance as they grow older, and it would be easy to check up the serum findings when a new policy is applied for. Recall for a moment that the 70 to 80 per cent. of gonorrheal gynecologic operations corresponds right closely to the estimated 75 per cent. of acquired gonorrhea in men—then why shouldn't the insurance company protect itself by increasing the premiums on a woman's policy as soon as she is married unless both she and her husband show negative serum tests? Perhaps that looks a bit lurid, but it is entirely feasible, and when the great American conscience is prodded on its pocketbook by such measures, there will shortly be such an outcry for the public weal as will not only give us ample regulative, hospital and laboratory accommodations to cope with the multitude of cases by which we are now confronted, but will, in a relatively few years, render these venereal diseases of little but historical interest.

7 West Madison Street.

THE ISCHEMIC LUMBAGO

A FURTHER CONTRIBUTION TO THE LUMBAR TYPE OF INTERMITTENT CLAUDICATION

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In a previous paper I directed attention to the occurrence of a *lumbar type* of intermittent claudication.[1] This affection is characterized by a painful spasm of the muscles in the lumbar region following the exertion of walking or standing, which disappears promptly after a brief period of rest. The pain was bilateral, limited above by the twelfth rib and below by the crest of the ilium. The muscle mass corresponding to this region is composed of the sacrolumbar portion of the erector spinae group and the quadratus lumborum muscles, and receives the greater part of its blood-supply through the lumbar arteries, which take their origin from the abdominal aorta. A great part of the muscular effort of walking and standing will naturally call into activity these muscles, and the symptoms of intermittent claudication were ascribed to an interference with the blood-supply of this region, either by disease of the lumbar arteries themselves or of that section of the abdominal aorta whence these vessels take their origin. In this manner a reduction in the quantity of blood circulating in the affected region is produced. The blood-supply is sufficient when the muscles are at rest, but inadequate for the requirements of active muscular effort; hence the intermittent ischemic character of the symptoms.

In the present paper this clinical picture is the subject of further study, and is enlarged by the description of a strictly *unilateral type*, and of a milder form of lumbar intermittent claudication resembling lumbago in location and character of pain, but which is evidently vascular from its intermittent character, the *ischemic lumbago*.

Case 1.—*Severe unilateral lumbar pains, occurring only on exertion, of the "ischemic type," in a woman aged 66, who*

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[25] Sippy and Moody: Lange's Colloidal Gold Chlorid Test on the Cerebrospinal Fluid; read before the Congress of Physicians at Washington, D. C., May, 1913.

[1] Hunt, J. Ramsay: The Lumbar Type of Intermittent Claudication, Am. Jour. Med. Sc., February, 1912.

has suffered from intermittent claudication of both lower extremities for ten years. The unilateral lumbar pains were always relieved by a brief period of rest and presented the typical character of the intermittent claudication.

The patient has been under my care for intermittent claudication of both lower extremities for the past ten years. Her symptoms are typical of the disease and the case has been fully described in a previous paper.[2] The left leg is more affected than the right and there are the characteristic painful cramps, paresthesias and rigidity on exertion which disappear after a brief period of rest. The femoral and popliteal arteries pulsate equally on the two sides; but the pulsation in the right dorsalis pedis is thread-like and is often not palpable, and there is only a feeble pulsation in the left posterior tibial. The left dorsalis pedis and the right posterior tibial show good strong pulsations.

Since my original report there has been practically no change in the condition of the lower extremities. The patient, however, has developed symptoms of diabetes in a mild degree which are readily controlled by diet. The amount of sugar varies from 0.3 to 1 per cent. Heart shows hypertrophy of *left ventricle. Marked accentuation of aortic second sound.* Systolic blood-pressure, 200 mm. General neurologic examination is negative.

Onset of Lumbar Symptoms.—In April, 1912, the patient first noticed pain in the lumbar region of the left side when very tired and after muscular exertion. This was described as an aching and throbbing sensation and it gradually increased in severity and in frequency. It is strictly limited to the left side of the vertebral column, below the ribs and above the crest of the ilium. When very severe there is a tendency for the pain to extend somewhat laterally, but never beyond the midaxillary line. At times the pain is quite sharp and knife-like in character, or as if an iron claw were gripping her in the loin. There is also at times a bursting sensation. These subjective symptoms are accompanied by a distinct feeling of weakness in the left side of the lumbar region after prolonged muscular effort. She says that the muscles do not feel as if in cramp or spasm, but there is often a swollen sensation as if there were "something there like an abscess." I have never been able, however, to make out any swelling or enlargement. Sometimes after the pains have persisted for a time the muscle mass is tender to deep pressure, but the tenderness is never of long duration. The pains come on only while the patient is walking or standing; or when sitting with the back unsupported, as in writing at a desk. All pain disappears promptly after a brief rest in the recumbent posture, and even the most violent paroxysms vanish after a short rest in a relaxed posture, although a dull aching and occasional shooting pain may last for several hours, if she has forced herself much during the day. At night in bed she has no pain.

In the morning on arising she is quite free from pain or stiffness in the back, but the exertions of dressing soon bring on the pain again. It never extends to the right side of the vertebral column. She has noticed that corsets make her less susceptible and that efforts in the early morning without this support are particularly prone to produce pain.

Her spine is perfectly normal in contour and mobility and there is no pain in the sacro-iliac articulation. Passive and active movements of the hip-joint in the recumbent posture are free and cause no pain.

I have seen the patient at regular intervals since the onset of these symptoms in April, 1912, and feel convinced that the unilateral symptoms in the lumbar region are of the same nature and have the same cause as the intermittent claudication in the lower extremities. The case is of interest as showing that intermittent claudication of the lumbar region may occur as a unilateral affection, and is due to a diminution in the flow of blood through the lumbar arteries of the affected side, the obstruction being situated in the arteries themselves or at their origin in the abdominal aorta.

Case 2.—*Unilateral intermittent claudication of the lumbar region, complicating aneurysm of the abdominal aorta.*

The patient is a man aged 51, with aneurysm of the abdominal aorta, whom I saw through the courtesy of Dr. David Bovaird. He is a plumber with a history of lues thirty years previously. Since June, 1912, he has been subject to pains in the left lumbar region which appear only after exertions as in walking, standing or in certain bending postures which bring into action the erector spinae group. The pain is quite severe and cramp-like and is localized in the muscles of the lumbar region to the left of the vertebral column. The intermittent pain and spasm have gradually grown worse, so that a walk of two or three blocks now is sufficient to bring on the painful symptoms. At such times there is also a sensation of weakness in the back. It is invariably relieved by a short rest from two to three minutes, either by sitting or by leaning up against a wall or other support. The pain always recurs in the same manner and in the same location after exertion, and it invariably disappears after a brief period of rest. While sitting or in the recumbent posture he is quite free from pain. During the night he suffers no pain or cramp in the lumbar region, but as soon as he is dressed and leaves the house, the pain appears after covering a given distance. At first this was several blocks, but now from two to three blocks is the distance limit. There are no subjective symptoms referable to the upper or lower extremities.

Physical Examination.—June, 1913: The man is thin and anemic from loss of blood—"gastric hemorrhages." Red blood-corpuscles, 2,432,000; hemoglobin, 30 per cent. The urine is free from albumin or sugar. The cardiac impulse is felt in the fourth interspace 8 cm. to the left of the midline; action is regular and of good force. There is a soft systolic bruit over the base in the pulmonary area which is transmitted to the axilla; there are no diastolic murmurs. The right limit of cardiac dulness reaches to the sternal border. Posteriorly over the lower portion of the left side of the chest there is an area of pulsation extending from the spine to the postaxillary line. There is also a heaving pulsation in the left upper epigastric region, and bimanual palpation shows definite expansile character.

Roentgenoscopy reveals aneurysmal dilatation of the upper portion of the abdominal aorta. Neurologic examination is negative.

The ischemic symptoms in this case are also unilateral in distribution, and are of special interest because of the association with aneurysm of the abdominal aorta. It is well known that intermittent claudication of the lower extremities may occur as a sequel to aneurysm of the larger vessels of the lower extremities. Indeed, Charcot's original description of the syndrome was based on a case of aneurysm of the iliac artery.

It is possible that further observations will demonstrate the occurrence of intermittent claudication of the lumbar region as an early symptom of abdominal aneurysm, and it is therefore well to bear in mind this possible association.

Case 3.—*Ischemic lumbago in a man aged 70.*

The patient retired from his business of storekeeper three years ago, since which time he has lived quietly in a small town in New Jersey. He has always been moderate in the use of alcohol and tobacco and never acquired syphilis. About two years ago he first noticed that during long walks an aching pain developed in the lumbar region on both sides of the vertebral column. If he rested for a few minutes all trace of the pain promptly disappeared and he was able to resume his journey. About the same time he noticed that the feet would become numb during the walk, and that this also passed off after the short rest. Since the appearance of these two symptoms, pains in the lumbar region and numbness of the feet. he has never failed to experience them during a walk and never at any other time unless he stands constantly in one position, when the same symptoms make their appearance.

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[2] Hunt, J. Ramsay: Intermittent Claudication and Allied Syndromes due to Angiosclerosis of the Extremities, Med. Rec., New York, May 27, 1905.

As time wore on, the aching pains in the back seemed to come on more often and after going shorter distances, so that now a quarter to half a mile never fails to elicit the symptoms. A short rest of three or four minutes brings immediate relief. The patient never has the pain in the recumbent or sitting posture, unless he is in an uncomfortable chair which does not support the back and he leans forward.

The pain corresponds in a general way to that portion of the erector spinae group which is situated below the twelfth rib and above the iliac crest, and is on both sides of the column. It does not extend laterally beyond the posterior axillary line. It is an aching pain and if he continues walking for a time after it appears it becomes quite severe, and the muscles feel as if in cramp, the affected portion of the back becoming weak and stiff.

The sensations in the lower extremities consist solely of paresthesia of the feet; there is no pain and the muscles of the feet and legs do not cramp.

Since the onset of these symptoms two years before, they have recurred constantly as the result of exertion, and at no time has the patient been able to walk the usual distance without their appearance. He asserts that changes of weather and the seasons have no appreciable effect on the severity of the occurrence of the symptoms.

Six months ago he developed a severe sciatic neuritis with the accompaniment of pain along the course of the nerve, and paresthesia of the left foot and leg. Later the muscles of the calf wasted and there was a tendency to foot-drop on the affected side. It was for this affection that he presented himself at the Vanderbilt Clinic and was referred to the neurologic department.

There is no pain in the right leg, and the action of the sphincters is normal. For some months the patient had had occasional pain in the left shoulder-joint which shows some limitation of movement. The shoulder pain and the sciatica are both aggravated by changes of weather.

Physical Examination.—The man is senile in appearance, with well-marked arcus senilis. The dorsal region of the spine shows a slight senile kyphosis. The movements are normal and free from pain or any special rigidity. There is no tenderness on pressure. After bending movements of the spine have been practiced for about five minutes, the same aching pain appears as after walking, and rapidly progresses to a severe painful spasm, which quickly passes off in the recumbent or reclining posture. The first heart-sound is weak and there is a systolic murmur at the apex; the second sound is accentuated. The femorals, popliteals, posterior tibials and dorsalis pedis arteries pulsate equally on the two sides. The same is true of the radials. There is active pulsation of the abdominal aorta palpable in the epigastric region, but no dilatation can be demonstrated. The urine is free from albumin or sugar. Roentgenogram of the lumbar region is negative.

Neurologic examination shows the residual signs of old sciatic neuritis, paresis of the peroneal and extensor groups of the left leg, with atrophy of the muscles and diminution of the left Achilles jerk. There are patches of anesthesia over the dorsum of the left foot and the outer side of the leg. The pupils are small and the reactions are difficult to test owing to old corneal opacities, the result of an inflammatory affection of the eyes forty years before. The knee-jerks are present and equal, as are also the tendon reflexes of the upper extremities. The plantar reflexes are normal.

The symptoms of lumbar ischemia in this case were of two years' duration and preceded the sciatic neuritis by one and one-half years. It was readily differentiated from the rheumatic affection of the lumbar region by the intermittent character, occurring only during muscular activity with complete cessation after a brief period of rest. Movements of the lumbar spine were normal and painless, unless the bending movements were continued, when the painful spasm was produced.

ISCHEMIC LUMBAGO

I think that there can be very little doubt, from the characteristic symptomatology presented by the cases recorded in this and in my earlier publication, that a condition, which may be termed "ischemic lumbago," or "intermittent claudication of the lumbar region," may occur both as a bilateral and as a unilateral affection. The recurrence of the symptoms regularly during muscular action and their prompt cessation during rest are characteristic of this type of lumbar pain; the blood-supply being sufficient in the passive state, but not equal to the increased demands during activity, with the resultant pains, cramps and weakness in the affected muscles.

When one considers the frequency of arteriosclerotic changes in the abdominal aorta, the thought naturally arises that there is a relationship between such lesions and the intermittent weakness, stiffness and pains in the lumbar region occurring in advanced life. This is a senile type of backache of vascular origin, in which the symptoms are not so clearly defined as in those which I have just described, but which nevertheless bear an essential relation to the defective blood-supply, and is promptly relieved by the recumbent posture or rest in a comfortable chair. Such lumbar pains, cramps and weakness bear the same relationship to exertion as do the cases described in this paper, although less clearly defined and less acute, and are promptly relieved by rest. In cases of this character in which a definite relationship to exertion may be demonstrated, the possible vascular or ishemic origin from defects in the lumbar circulation should be considered.

DIAGNOSIS

Ischemic lumbago is readily recognized and differentiated from all other affections of the back by the following characteristics:

In ischemic lumbago there is a sensation of pain or painful cramp, which may be associated with a feeling of weakness or stiffness, localized in the muscles of the lumbar region. This may be bilateral or strictly unilateral in distribution and is limited above by the twelfth rib and below by the crest of the ilium. When severe the pain may radiate as far laterally as the mid-axillary line. The painful area is not tender to pressure, except after prolonged exertion, and then it is not of long duration. This pain is characterized by its intermittent character and absolute dependency on muscular exertion.

If there is no effort or strain on the muscles there is no pain. When the pain is induced, any posture which places the affected muscles at rest promptly produces relief, and the pain ceases.

For diagnostic purposes, bending movements of the spine may be used to induce the pain and demonstrate its local and intermittent character. The movements of the spine are normal and in the beginning painless, which is an important distinguishing feature from lumbago of rheumatic origin.

In the cases which have come under my observation, the pain was not influenced by changes of weather, and this may be regarded as another point of difference in differentiating from the rheumatic lumbago, with which it is most likely to be confused.

All other affections of the spinal column and pelvic joints may be excluded by the complete freedom of pain in active and passive movements.

20 West Fiftieth Street.

THE SNARE VERSUS THE SLUDER OPERATION IN TONSILLECTOMY

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I have been following with a great deal of interest what is being said regarding the Sluder tonsillotome and method of removing the faucial tonsils. So much of it has been commendatory and perhaps deservedly so, that it is with considerable hesitation that I raise any question either with regard to the aptitude of the instrument, or the efficiency of the Sluder technic. The way in which some surgeons have taken up this instrument and this special method makes one think that the operative procedures of these men in tonsillectomy during their previous practice must have been very unsatisfactory.

The Sluder instrument is similar to the old McKenzie tonsillotome, modified in a few respects and so constructed as to be used in reverse position. This undoubtedly gives it a decided advantage over the older instrument, as its facility for engaging the tonsil is increased, a greater leverage is gained, and, on the whole, for this method of tonsillectomy, it is a better instrument. With the McKenzie tonsillotome, however, there was quite a large percentage of enlarged tonsils that could be removed quickly, completely and to the entire satisfaction of both the operator and the patient.

The chief advantages and the real value of the modified instrument are found in the new points in operative technic which were introduced by Dr. Sluder. There can be no doubt but that he has discovered a very valuable aid in the complete removal of tonsils by the tonsillotome alone, in his method of dislocating the gland forward and upward and crushing it through the oval aperture of the instrument by pressing it against the inner surface of the mandible. It is my opinion, however, that even with the introduction of this method the claimants for the value of the modified tonsillotome have been altogether too enthusiastic.

After thoroughly testing the original instrument and Dr. Ballenger's modification of it, at the university clinic and elsewhere, with strict adherence to the Sluder technic, it is my opinion that quite a percentage of tonsils either cannot be removed by it at all, or only with the greatest difficulty. Unfortunately, these especially need to be completely removed; for example, tonsils that have been previously "clipped," leaving a broad, flat base, which has been invaded by frequent infection, and has become firmly bound to the surrounding structures by fibrous bands of scar tissue, so that the remaining portion of tonsil is not only partially buried by the pillars of the fauces and folds of the soft palate, but is firmly held in its position by these unyielding bands. Such a condition is by no means rare. There is also a soft friable flat tonsil made up largely of crypts and pockets, filled with a soft caseous infected material which produces a continual inflammatory condition. Such tonsils often crush almost like jelly, and from their peculiar shape, are most difficult to engage in the aperture of the Sluder tonsillotome.

The other classes of tonsils which are difficult to operate on by this method I do not care to take space to mention. It is my opinion that no one will deny that the thorough enucleation of tonsils belonging to the two classes previously mentioned is exceedingly important.

Too much credit cannot be given to Dr. Sluder for the technic he has devised for the use of the tonsillotome. On the other hand, the removal of simple hypertrophied tonsils is comparatively so easy, that its operative method is of no great importance. Many of these, as I said in the beginning, can be removed quickly and completely with the tonsillotome, but the Sluder method no doubt facilitates the enucleation of many tonsils which heretofore the tonsillotome could not remove. If, however, the technic is not available in the removal of the varieties of tonsils which are not only most difficult to remove by ordinary methods, but also show most need for removal, it does seem from the point of view of a teacher of clinical laryngology that we should present to the student a method which may be successfully used in all cases. Fortunately there is such a method, and while it may be a little more difficult to master, it is of equal service, when once acquired, in every class of cases. With this method all are familiar, but I shall present it in a few words.

Place the patient in the dorsal position with the head slightly lowered. Obtain complete relaxation by ether anesthesia and thoroughly illuminate the throat by a good head-light. Grasp the tonsil firmly and deeply with a curved tenaculum; lift the gland from its bed and dissect it from the surrounding structure with a right-angled knife (or scalpel), slip a snare over the tonsil down to its base and remove it. The work can be done with the most difficult tonsil in less time than it has taken to describe it, and the technic is of equal use in all cases. With such a simple, complete and universal method as the snare operation affords, it is difficult for me to understand why many seem to be earnestly searching for some other method and willing to try a new instrument and adopt another technic.

CHRONIC TUBERCULOUS DIAPHRAGMATIC PLEURISY WITH SYMPTOMS RESEMBLING GASTRIC ULCER

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This series of cases, observed for the most part in the medical clinic of the San Francisco Polyclinic, is reported for the reason that the pain of which the patients complained so closely resembled that of gastric ulcer that they had frequently been informed that they suffered from that disease, and in some instances the patient had undergone prolonged treatment without good effect.

The occurrence of a distinct symptom-complex consisting of pain going through to the back, vomiting and gas as a symptom of chronic diaphragmatic pleurisy has not, so far as I know, been mentioned, although the literature is full of references to the sometimes puzzling occurrence of pain in the abdomen caused by pneumonia of the lower lobe or of acute basal pleurisy.

This symptom-complex of which I am speaking is due to adhesions between the diaphragm and basal pleura and is caused, not by an acute inflammation accompanied by fever and leukocytosis, but by a mechanical pulling of the adhesions on the diaphragm, as a result of which pain is referred along the course of the lower intercostal nerves to their termination over the abdomen. The prominent symptom of pain is thus produced while the patient is apparently well. There is no cough, fever or anything to suggest lung-disease, while the site and character of the pain seem to point conclusively to gastric ulcer. In case a hemorrhage has occurred, the picture has seemed complete and physician and patient alike have accepted it as conclusive proof of the existence of an ulcer.

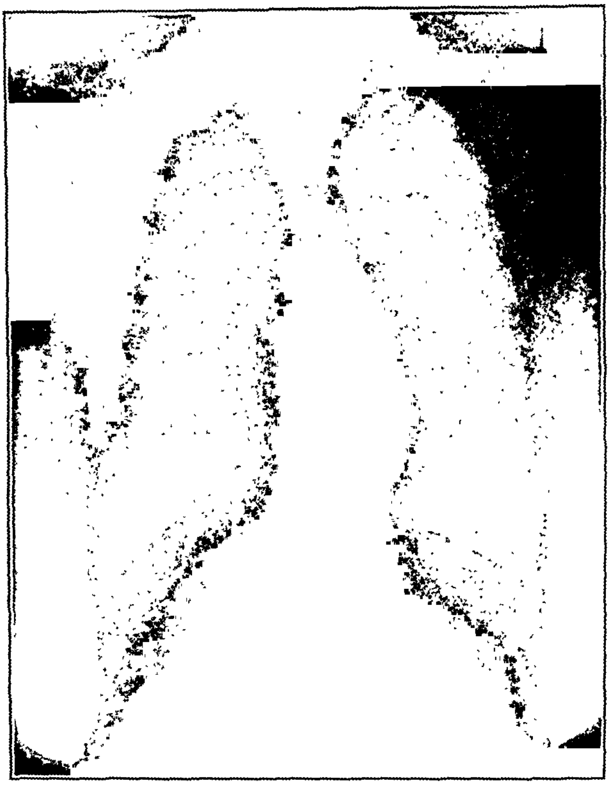

Fig. 1.—Localized retraction of the right diaphragm; shadow at right apex; infiltration and peribronchial thickening at the root of each lung, with infiltration from the right hilus to the base; calcified lymph-nodes. This picture and Figures 2, 3, 4, 5 and 6 were taken by Dr. Anna K. Davenport.

These patients are usually of a neurotic type. They have been under treatment for stomach-trouble for many years and their knowledge of the signs and symptoms of gastric or duodenal ulcer is equaled only by their readiness in interpreting their experiences to correspond with the text-book description of this malady.

The histories are all very similar. The patient has for years been troubled at intervals with pain over the stomach after eating. This pain goes through to the back and a tender spot can be found to the right of the lower dorsal vertebrae. The taking of food or alkalies often relieves the pain and vomiting always relieves it for a time. The presence of much gas is complained of as a very annoying symptom. The patients also tell of prolonged courses of treatment in hospitals on limited diet, which has had no effect on the pain, but unfortunately has hastened the development of any latent tuberculous lesions that were present.

When the sufferer has sought relief from the surgeon rather than the physician, his condition has been still more pitiable. Gastrojejunostomy, removal of supposed chronic appendixes, tying up of supposed floating kidneys, etc., have been followed by as many explorations for adhesions as the patient's strength will stand. It will not stand for many, however, and he returns finally with his pain still unrelieved, but with the evidences of active lung-trouble that throw his former gastric symptoms into the background.

Case 1.—Miss E., aged 28, came to the clinic complaining of severe pain in the stomach after eating. She has had attacks of stomach trouble for many years and in 1906 was for a long time in a hospital following a hemorrhage, which was supposed to have come from a gastric ulcer. The pain is at present worse than usual and goes through to the back. She has lost 10 pounds in weight and is afraid she is going to have another attack. She has had no other illnesses and is not subject to coughs or colds; vomiting relieves the pain, and she is troubled with gas. Cross-examination changes her story somewhat. The pain has no definite time relation to eating. It is usually felt over the stomach as she described, but at times in the back only or in the side. She has a slight cough and sometimes has night sweats and fever in the afternoon.

Physical examination shows no further evidences of stomach trouble. There are no occult blood in the feces and no abnormalities of stomach contents. Examination of the chest, however, reveals definite signs of trouble. The roentgenogram (Fig. 1) shows localized retraction of the right diaphragm; shadow at the right apex; infiltration and peribronchial thickening at the root of each lung with infiltration from the right hilus to the base, and calcified lymph-nodes.

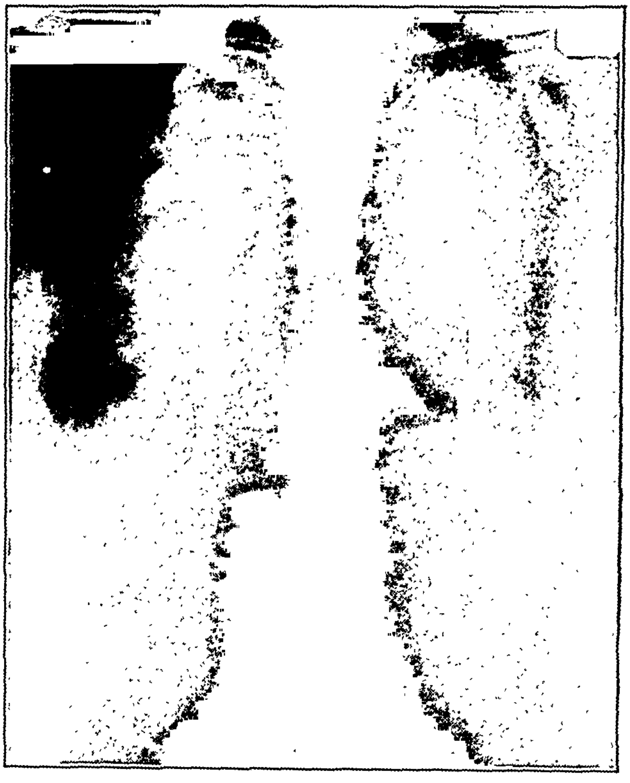

Fig. 2.—Localized retraction of right diaphragm; shadows at right and left apices; infiltration at each hilus and throughout each lung, with isolated tubercles between the right hilus and the base.

On being put under observation she shows a slight afternoon rise of temperature and reacts to minimal doses of tuberculin. Under regimen and liberal diet the stomach symptoms have nearly disappeared and the occasional pain is now clearly due to overexertion.

The marked retraction of the diaphragm on the right side seems to be a mechanical cause for the occurrence of pain in this case in view of the fact that no other abnormality found could have accounted for it.

CASE 2.—This patient suffered from pain of the same character as that described. This was ascribed to gastric trouble and she was carefully investigated by a number of physicians. No evidences of stomach disease were found but instead evidences of a chronic fibroid tuberculosis.

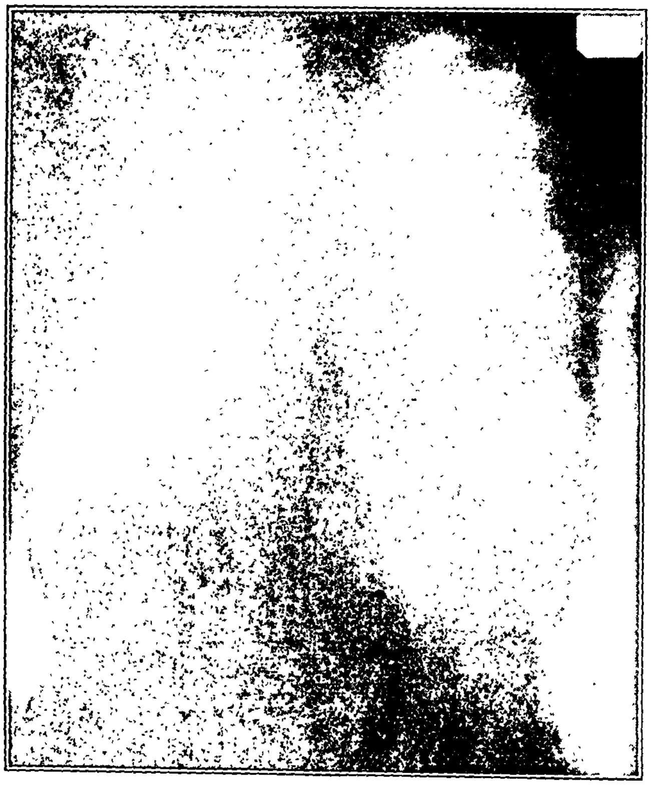

Fig. 3.—Localized retraction of the right diaphragm; infiltration at the right and left hili, with enlarged bronchial lymph-nodes; infiltration from right hilus to base, and a few isolated tubercles.

Roentgenogram (Fig. 2) shows localized retraction of right diaphragm; shadows at right and left apex; infiltration at each hilus and throughout each lung, with isolated tubercles between the right hilus and base.

This patient was a woman of 60 and the tuberculosis was of the fibroid type without much in the way of active symptoms. The absence of fever and cough seems to preclude ascribing the pain and stomach symptoms to the toxic effect of the tuberculosis, while the marked retraction of the diaphragm suggests itself as the cause.

In her case, prolonged and careful investigation had excluded gastric disease before the chest was looked on as a possible source of the pain.

She has been under observation for a year, has improved much in general health, suffers no more from so-called stomach trouble, and the lung condition has improved.

CASE 3.—This patient comes complaining of pain after eating, accompanied by gas and distention. Vomiting often occurs which relieves the pain. Four years ago she was operated on for gastric ulcer, but without effect on the pain. It has been worse recently and she says that she has lost about 10 pounds in weight. There is no cough or expectoration, but last year she had an attack of pleurisy of the lower right chest lasting two months. Three years ago she had a cough with expectoration in the morning.

Examination shows the stomach distended with gas and a painful point to the right of the abdomen and also to the right of the vertebral column. Gastric analysis shows no abnormalities. There is no occult blood in the stools. Roentgenoscopy of the stomach, after a bismuth meal, reveals a normal stomach with no sign of any change due to operation. Examination of chest shows harsh breathing at the right hilus, diminished resonance at the right apex, and limited motion of the right diaphragm with relative dulness of the base. On observing the temperature, a typical afternoon rise to 99.5 or 100 is seen.

The roentgenogram (Fig. 3) shows localized retraction of the right diaphragm; infiltration at the right and left hili with enlarged bronchial lymph-nodes; infiltration from the right hilus to the base, and a few isolated tubercles.

While the retraction of the diaphragm is not so marked as in the two previous cases, the pain is ascribed to this cause on account of absence of any proof of gastric disease or any other abnormality which seems likely to cause pain of this character.

After six months of regimen, diet and tuberculin, the gastric ulcer idea has vanished. The patient occasionally has pain, especially pain in the back, but this can always be traced to overexertion, particularly overuse of the arms.

CASE 4.—This patient has suffered from abdominal pain for the past ten years. As he had then recently returned from the tropics, it was supposed to be due to tropical dysentery infection, and an operation to allow flushing of the intestine was performed. This resulted in no improvement and the appendix was removed. This and several operations for adhesions resulting in no improvement, a short circuit of some kind was made in the intestines and following this another operation to correct the vicious circle.

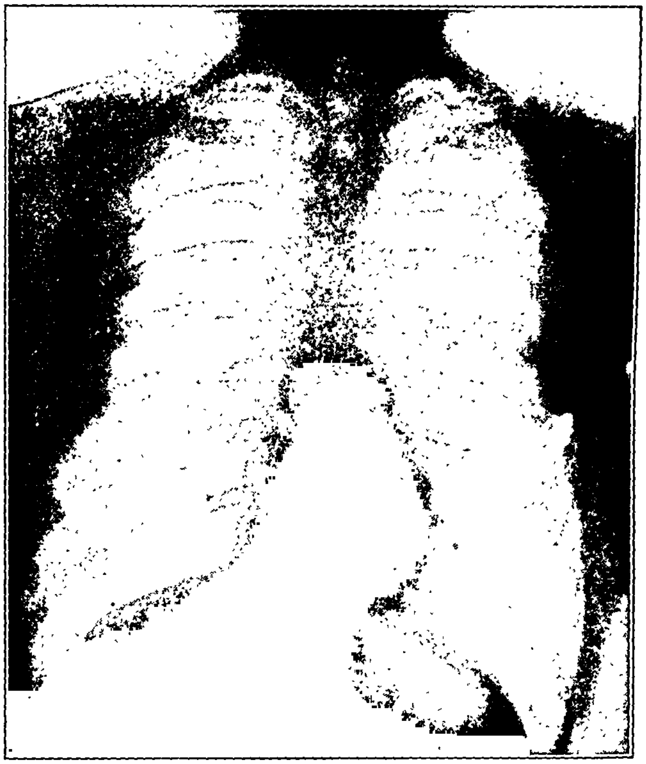

Fig. 4.—Localized retraction of diaphragm; shadows at right and left apices; infiltration at each hilus, with calcified lymph-nodes; infiltration at each base, with some recent tubercle formation.

On presenting himself for examination he is seen to be thin and ill nourished. He has begun to cough and expectorates some. He is very nervous and hypochondriacal and is firmly convinced that his difficulty is entirely in the abdomen. Signs of pulmonary trouble are so evident, however, that he is willing to undergo treatment, and on being confronted with a roentgenogram of himself he remembers an attack of pleurisy in the lower right side which occurred prior to his original supposed tropical infection. Evidences of diaphragmatic pleurisy present are limited motion of the right diaphragm, pain over the course of the lower intercostal nerves, and relative dulness of the lower right chest.

The roentgenogram of his chest (Fig. 4) shows localized retraction of the diaphragm; shadows at right and left apex; infiltration at each hilus with several calcified lymph-nodes, and recent infiltration of the right and left bases with some tubercle formation.

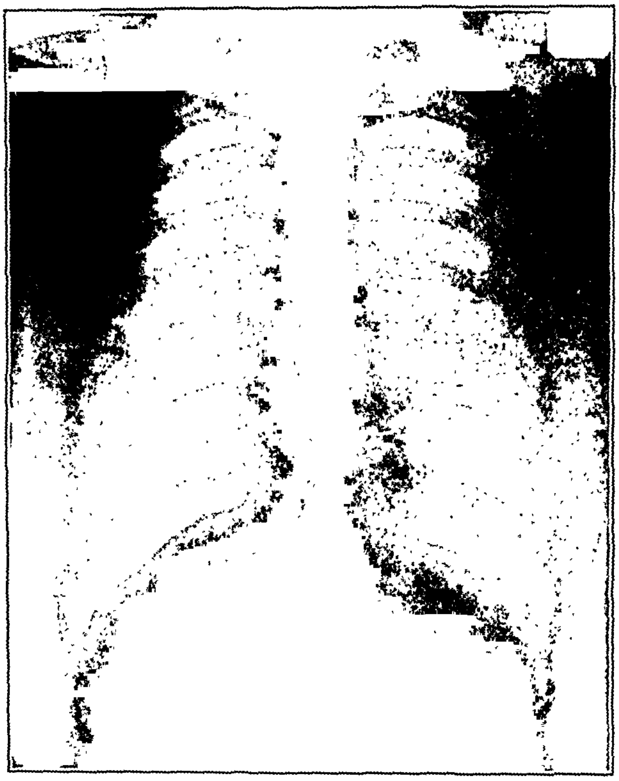

Fig. 5.—Shadow at right apex; infiltration at right and left hili with calcified lymph-nodes; recent infiltration at right and left bases; localized retraction of right and left diaphragm.

CASE 5.—This patient complained of pain of the general character of that described. Physical examination showing evidences of lung abnormalities, a roentgenogram (Fig. 5) was taken which showed a shadow at the right apex; infiltration of the right and left hili with calcified lymph-nodes; recent infiltration at right and left base, and localized retraction of right and left diaphragm.

Under regimen and antituberculous treatment the pain has largely subsided although it is still present at times.

CASE 6.—This patient had been under a prolonged course of treatment for supposed gastric ulcer. Her pain was identical with that before described and she was convinced that she was in imminent danger of perforation. As a result of her limited diet and unfavorable surroundings, she had lost 30 pounds in weight and suffered more than ever.

Physical examination showed afternoon rise of temperature; reaction to minimal doses of tuberculin; retraction of right diaphragm, and abnormal breath-sounds at each hilus and right base, without moisture.

Roentgenoscopy revealed localized retraction of the right diaphragm due to adhesions; infiltration at each hilus with old lymph-nodes, and recent infiltration at the right base.

Six months of rest, diet, open air and tuberculin have resulted in a return to the patient's normal weight and health. She only occasionally feels the old pain, the nature and cause of which she thoroughly understands. She is no longer afraid to eat and the return of her old trouble is no longer feared.

CASE 7.—This differs in no particular from the others in essential facts. The pain after eating, at first ascribed to gastric ulcer, was found to be due to old pleurisy of the right base. Evidences of pulmonary disease were present and the patient was sent to the tuberculosis hospital after all investigations had proved that no disease of the stomach existed. Here he was lost sight of and he is only referred to as his history shows the presence of the symptom complex under discussion, with no signs of gastric disease but with evidence of the presence of pulmonary tuberculosis.

CASE 8.—This patient is referred to as her picture (Fig. 6) shows in a remarkable manner the presence of pleuritic adhesions between the base of the lung and the diaphragm. She has an advanced case of tuberculosis, in which an artificial pneumothorax was performed for the relief of severe cough caused by large cavities in the right lung. Following the third injection of gas, which produced a positive pressure of 2 cm. of water with inspiration, she suffered for several hours with pain in the stomach, gas and vomiting. This is not a common occurrence after operations to produce pneumothorax, and the picture apparently shows the cause. The adhesion extending from the base of the lung to the diaphragm, pulling up the latter with inspiration, may be taken to be the cause of the presence of pain in this instance for the reason that pain in the abdomen, gas and vomiting do not frequently occur from other effects of the operation of artificial pneumothorax, and no other cause than the pleuritic adhesions could be found to account for it.

Taking into consideration the evidence of this roentgenogram with a consideration of the series of cases here presented, it seems fair to conclude that the presence of pleuritic adhesions between the base of the lung and the diaphragm, causing localized retractions of the latter, may in some instances produce a symptom-complex of pain, gas and vomiting resembling the symp-

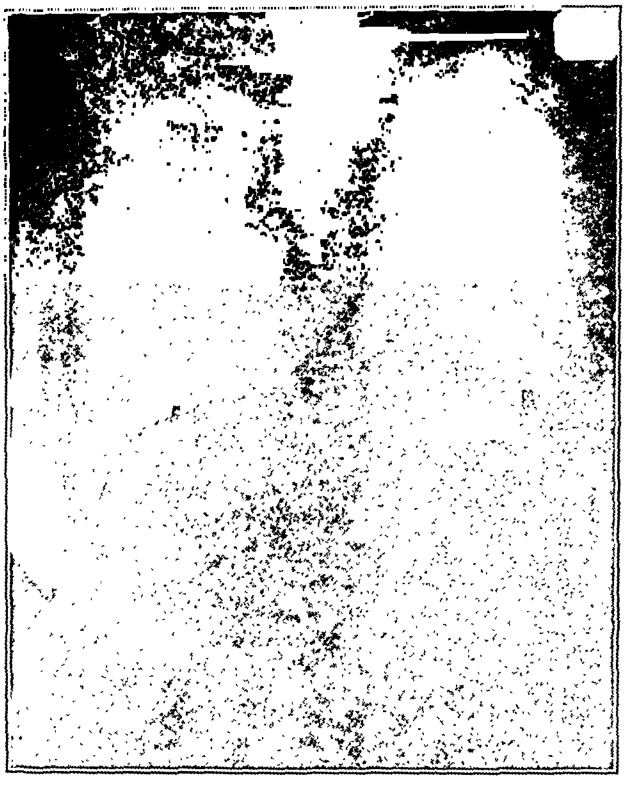

Fig. 6.—Advanced tuberculosis of both lungs after artificial collapse of the right; dense infiltration of left lung, with tubercle formation; conglomerate tubercles throughout right lung, with cavity at level of second rib; collapsed lung is attached to diaphragm by fibrous adhesion.

toms of gastric ulcer. If such patients are carefully examined for beginning lung tuberculosis, and it is borne in mind that the phrenic plexus and lower intercostal nerves may transmit pain to the front of the abdomen when the disturbance is in fact between the diaphragm and the base of the lung, many operations for gastric ulcer may be avoided and many lives saved by early resort to antituberculous treatment.

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EPIDEMIC POLIOMYELITIS AND DISTEMPER OF DOGS

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It has recently been my fortune to attend several cases of poliomyelitis and to investigate a small epidemic which occurred among the Indians of some fishing villages situated in central Alaska near the town of Tanana on the Yukon River.

The epidemic was not an extensive one. There were a few more than thirty cases in all. There were four deaths, three of which occurred in camps on the Yukon River and one at Tanana, Alaska. In five cases there was residual paralysis. The symptoms of poliomyelitis were in no way different from those which are usually described. Eleven of the cases came under observation of the army surgeons stationed at Fort Gibbon.

The interesting features of this epidemic were associated with its mode of origin, its progress and its decline. The epidemic among the human subjects was preceded by an epidemic of "distemper" among the dogs. The symptoms manifested by the dogs were the same as those shown by the human subjects.

There have been several unexplained facts noted in the study of the epidemiology of this disease on which this epidemic throws light. Epidemics have been more frequent and the case rates higher in small towns than in cities. There has been the question of infection through the medium of stable-flies (*Stomoxys calcitrans*). There has been a suspicion that the disease might be perpetuated in some of the domestic animals and that the infection could be brought from them to the human subjects.

The people among whom this epidemic took place were not in close contact with the usual routes of travel. There was little probability that the disease was brought to them from the United States. They have had such epidemics before. Sporadic cases are not unknown. They have no domestic animals other than dogs. They have a great number of dogs which they use as work animals to draw their sleds in winter and tow their boats in summer. About the fish-camps the dogs are ubiquitous. They are camp scavengers. They are in close contact with the natives and play with the children. It is to be expected that the natives and the dogs would share each other's diseases as well as the feasts and famine and periods of hardship or ease which may fall to their common lot. The lives of the natives and of the Esquimaux or Malamut dogs are closely associated. They depend on each other at times for existence. These dogs are probably more closely associated with men than are animals of any other species.

There are two or three kinds of "distemper" which affect the dogs. One kind is a sort of influenza. There is another kind which is more severe and more fatal. The dogs which are affected by it die in great numbers. Those which survive are apt to be weakened. In many instances there is partial motor paralysis of the hind legs. There are frequently clonic contractions which usually affect one hind leg.

The epidemics of distemper occur every three or four years, though there are apt to be occasional cases between the epidemics. The young animals are affected. In years when there is an epidemic, practically all of the animals which have not been previously infected are attacked. When there is a sufficient accumulation of unprotected material another epidemic occurs. In this respect the epidemics of "distemper" are similar to epidemics of small-pox in unprotected communities.

The summer of 1913 was a time of epidemic distemper among the dogs of the Yukon and Tanana valleys. The disease became prevalent during July and August, and continued until the frosts in the latter part of September. The type of "distemper" was very severe. From 50 to 80 per cent. of the young animals which were affected by it died or were so badly affected that they were killed to relieve their suffering.

The distemper in the dog commences with symptoms of coryza. There is running from the nose and collection of pus at the inner canthus of the eyes. In cases which are not very severe the discharges are more mucous. In the more severe cases they are more purulent. In the very severe cases the pus is thick and dark yellow. There are fever and the usual loss of appetite common to all infections. The animals may die in two or three days, or the disease may become more chronic and they may live for several weeks or ultimately recover. In some of the severe cases there are convulsions early in the disease. The dogs usually show paralysis of the extremities. The infection may extend to the lungs and the animals have the symptoms of pneumonia.

In the latter part of August, 1913, word was brought to Tanana that the Indians at two fishing-camps 25 miles down the Yukon River were suffering from some disease. Such rumors are frequent among the Indians and excite little attention. On September 4 two bodies were brought to the mission at Tanana from one of these fishing-camps for burial. One was that of a child aged 2 the other that of a woman aged 18, an aunt of the child. There had been no white persons in attendance and the cause of death could not be learned from the Indians. The child had "just died." The woman had been sick for a day or two and had died because she could not breathe. The lungs had filled up. No other information could be obtained from those who were present. No necropsy was made.

On September 9 an Indian woman, aged 22, came under observation. She had been visiting at the vicinity of the fishing-camps. She was the wife of a white man who had contracts for carrying the Alaskan winter mails. He had fifty dogs which were used during the winter for sledding. The epidemic of "distemper" had broken out among his dogs, and he had been visiting the camp where the dogs were kept during the summer. The dogs were valuable and he had given them care to prevent loss through the disease. Seven out of eight young dogs in this lot which were sick with distemper died or were killed. The wife and child of this man were with him on this trip.

Shortly after her return to Tanana the woman became sick. She had the usual manifestations of an attack of influenza, but in addition complained that her legs were heavy. On September 11 she was seen again. At this time there was fever, the temperature being 101 F. She had slight difficulty in breathing. There were coarse râles throughout both lungs with partial consolidation at the base of the left lobe. There was not enough consolidation to account for the difficulty of respiration. She complained that both legs were paralyzed. She was unable to move them. During the night her left arm became paralyzed, her breathing became more and more shallow and death occurred toward morning.

One other death took place from this disease in the case of a young Indian who lived at the fishing-village. There were three patients with paralysis brought from the same village to Tanana for treatment. They were children who were members of the same family in which the first deaths had taken place. Two of them had both legs paralyzed. The other had but one leg affected. One other patient with paralysis of both legs remained at the village.

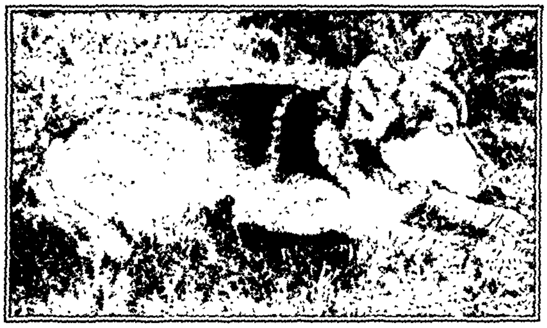
Fig. 1.—Dog with distemper. Hind legs paralyzed.

Seven other patients were brought to the Tanana Mission from camps on the Tanana River. These camps were 50 miles distant from those in which the disease was originally reported. In the Tanana camps, as in those on the Yukon River, there was first the epidemic among dogs, after which there was the outbreak of disease among the Indians. The disease among the human subjects was here of a less severe type. The early cases were treated with large doses of hexamethylenamin. Whether as a result of this treatment or because of less severe original infection most of the patients made prompt recovery. All of these patients were children. Two of them had slight paralysis, one of an arm, the other of both legs. The last-mentioned was a girl of 12, who was taken sick October 1. She was able to walk about a little, October 14, and was regaining the use of her legs.

In the milder cases the only symptoms were those of coryza and bronchitis. When taken sick the children were stupid rather than restless. This fact was remarked by their parents. They wanted to sleep a great deal. It may have been in part a racial characteristic or in part due to the fact that they had been traveling from their camps and were tired out.

There was not conclusive evidence that the milder cases were of the same infection as that which caused the paralysis. There was strong presumptive evidence to this effect in the fact that several children of one family would be taken sick at the same time, and that only those who were most sick would have paralysis, while the others escaped. In this respect the epidemic among the children was similar to the epidemic among the dogs.

There is some question as to the mode of transmission of the infection. There was every opportunity for the germs to be carried by direct contact. There was the close association of the Indians with the dogs. The people lived in tents and did not have much room. Their habits were not cleanly. There was ample chance for the infection to be transmitted by flies. In the fishing-camps there are always a great many flies. The salmon is hung on long poles over fires to dry and be smoked. The refuse from the fish is often thrown on the beach, where it is partly eaten by the dogs and partly scattered along the shore and allowed to rot. The odor of fish draws swarms of flies. The flies which are more prevalent are a large fly known as the moose-fly, a medium-sized fly about the size and similar to the stable-fly, and the ordinary house-fly. The house-fly is not indigenous to central Alaska. It has been imported by the white men from the United States.

There are several facts which point toward transmission by the bites of flies as the usual means of infection. The disease has been much more prevalent where flies were most abundant. All the cases were contracted at or near the fish-camps. There were other Indians who did not live at the fish-camps. They did not contract the disease. There were not many flies where there was no fish.

Something more than direct contact appears to be needed to bring infection. There was the case of one woman who died from the disease after visiting the fishing-camps and the camp where the mail dogs were cared for. She had with her her child of 2 years. The child escaped the infection, though of a susceptible age. If direct contact with an infected person were apt to give infection it had ample chance to become infected by its mother. These persons stopped only a short time at the fishing-camps and were not closely associated with the Indians there. They had a tent of their own in which they lived.

A great many dogs owned by white persons had distemper. None of the white persons became infected with epidemic poliomyelitis. They kept their dogs chained up away from their dwellings. They had few flies about. The people of the town on Tanana and the garrison near by were particular in the care of their houses and in the care of their animals. Their houses were screened. It may have been that they escaped the disease because they were protected against the bites of flies, or, perhaps, because they were more cleanly, and were less closely associated with their dogs.

Fig. 2.—Same dog attempting to walk.

One reason for belief that the transmission may be through flies is that the spread of the disease is promptly checked by the frosts. When the flies go the disease stops. It has long been known that distemper does not spread after the cold weather sets in. In this respect there is an analogy between distemper and yellow fever.

The study of this epidemic is incomplete. There was no bacteriologic study made of the virus. There was no comparative study of the spinal cords of animals and of human subjects which succumbed to the disease. There was no transfer of the virus from infected human subjects to unprotected young dogs, nor were susceptible animals, such as monkeys, inoculated from infected dogs.

It is hoped that in some future epidemic there may be opportunity for the pursuit of these investigations. This epidemic has passed over. The Alaska winter has set in and there is little hope for further study along this line or fear of spread of the epidemic.

It is believed that the experience in this small epidemic will be of value in the study of other epidemics. The fact that the disease is more prevalent in rural communities where more dogs are kept is significant. The theory that the disease is common to dogs and human beings fits so well with the experiences of epidemics which have taken place in different parts of the United States that it is well worth consideration. There is also the possibility that other domestic animals, as horses or cattle, may have the same disease. Its transmission by insects may not be confined to the horse-fly. It may be carried from one individual to another by means of vermin. Many of the persons afflicted in this epidemic were infested. It is quite probable that there are several modes of transmission. However that may be, this experience is sufficiently suggestive to be a warning to persons who live in rural communities to be careful to keep their houses screened and to see that their children do not become too intimate with young dogs which may have distemper.

TRICHINOSIS

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SYMPTOMATOLOGY AND CONSIDERATION OF CASES

The epidemic seen by us consisted of ten cases, all of the affected persons being Italians. It was caused by the ingestion of infected and insufficiently cooked pork, obtained from two local butchers. Of the ten persons, eight, who consumed the pork from one source, recovered; two, who consumed the pork from the other source, died. In general, the symptoms were those common to this disease, namely:

1. Gastro-intestinal — vomiting and severe purging shortly after the ingestion of the infected meat.
2. Continuous fever, moderately elevated; pulse and respirations but slightly affected (Fig. 1).
3. Edema of the face, especially of the eyelids.
4. Muscular pain, sensitiveness, rigidity and contractures.
5. Headache, loss of patellar reflex and sometimes. also, loss of the Achilles tendon reflex; Kernig's sign was almost invariably present.

No enlargement of spleen was found in any case, the diazo reaction was positive and an excised piece of the biceps near its tendinous attachment showed the presence of numerous trichinae (Fig. 2).

There was marked leukocytosis and tremendous eosinophilia, also marked asthenia and profuse perspiration. An additional symptom, heretofore undescribed, which was present in both the fatal cases, was the marked dilatation of the pupils. This sign was present from the beginning of the disease.

Among the first eight patients who recovered, were four children between the ages of 3½ and 12. These children suffered only slightly from the disease. At no time were they confined to bed. They all had swelling of the face, particularly of the eyelids, and weakness in the limbs. One child, aged 8, suffered from marked prostration, so that locomotion was very difficult. This patient also had a moderate rise of temperature and marked pains in the muscles. The leukocyte count in these children went up as high as 75,200, and the eosinophils ranged from 60 to 79. All symptoms disappeared; however, at the end of three weeks, and recovery apparently was complete. Nine months after recovery the children still show no muscular pain, tenderness or other symptom of the disease, which, as observed in our cases and in accordance with the observations of others (Rupprecht,[1] Kratz,[2] Mosler,[3] Wortabet,[4] etc.), is mild in children. The reasons for this have been given as (1) weakness of stomach juices, hence interference with the liberation of encapsulated trichinae; (2) extrusion of large undigested particles of meat with the frequent bowel movement (Mosler and Peiper[5]); (3) shortness of the intestinal tract (Virchow[6]).

These explanations seem to us speculative and not at all conclusive. A more plausible explanation may be found in the fact that children eat a smaller quantity of the infected meat and hence ingest a smaller number of parasites. That the number of parasites ingested is in direct proportion to the severity of the infection has been established beyond dispute by numerous animal experimentations. To corroborate this fact we performed the following experiments:

Jan. 14, 1913, we removed from one of our patients, who subsequently died, a small piece of the biceps muscle, near its tendinous attachment. A piece of this muscle, immersed in saline and squeezed between a slide and cover-glass, showed, microscopically, numerous living trichinae, both within and without the muscle fibers (Fig. 2). We fed a rabbit with 2 gm. of this muscle. The rabbit did not show the slightest symptom of trichinosis. It did show an increase in eosinophils to 23 per cent., and later to 39 per cent. Our result with white rats was similar to that with the rabbit. At no time could we discover trichinae in the feces of these animals, even in repeated examinations. Furthermore, in our epidemic, a man and a woman, who ate the improperly cooked infected pork, apparently escaped scot-free (*their blood was not examined*). Certainly no claim can be made for their apparent immunity on the ground of anatomic or physiologic variations from the rest of the participators in the feast. It would therefore appear to us that the quantity of meat ingested is the deciding factor in these cases as well as in children.

We were never able to discover the parasite in the feces of these patients, though Dr. Henry Joachim diligently and repeatedly examined the feces at a time when parasites were undoubtedly present in the intestinal tract, and embryos were discharged by the thou-

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1. Rupprecht. B: Die Trichinenkrankheit im Spiegel der Hettstädter Endemie betrachtet, Hettstädt, 1864.
2. Kratz, F.: Die Trichinenepidemie zu Hedersleben, Leipsic, 1866; Vorläufiger Bericht über die Trichinenepidemie in Hedersleben, Berl. klin. Wchnschr., 1865, No. 52 p. 509.
3. Mosler, F.: Helminthologische Notizen über eine Trichinenepidemie aus der Jahre 1849, Virchow's Arch. f. path. Anat., 1865, xxxiii, 414; Zur Enstehung der Trichinenendemien, Virchows Arch. f. path. Anat., 1865, xxxiii, 422.
4. Wortabet, John: Eine Trichinenepidemie am Jordan, Virchow's Arch. f. path. Anat., 1881, lxxxiii, 553.
5. Mosler and Peiper, E.: Tierische Parasiten in Nothnagel's specielle Pathologie und Therapie, 1894, vi.
6. Virchow, Rudolph: Ueber Trichina spiralis, Virchow's Arch. f. path. Anat., 1860, xviii, 330.

sand from the pregnant uteri of the trichinae. And yet, why could we find no parasites, dead or living, in the feces? We are fully aware that Hoyberg,[7] Chatin[8] and others believe that the parasites are discharged, living, in the feces and constitute a factor in the spread of the disease, but this is certainly contrary to our experience. We are inclined to believe with Gerfontaine, Askanazy,[9] Romanowitch,[10] Graham,[11] Frothingham,[12] Stäubli[13] and others, that the female parasite does not discharge its young into the lumen of the intestine, but bores under and lifts up the epithelium of the villi and of the crypts of Lieberkühn and discharges its young in the membrana propria. These authors believe that the embryos are thus deposited direct in lymph-spaces or central lacteals. It is only in exceptional cases that embryos are discharged in the lumen of the intestines. The male trichinae die soon after copulation. Since we failed to find either living or dead trichinae in the feces of our patients or in those of the experimental animals, we agree with Fiedler[14] that the dead trichinae must be dissolved in the small intestine.

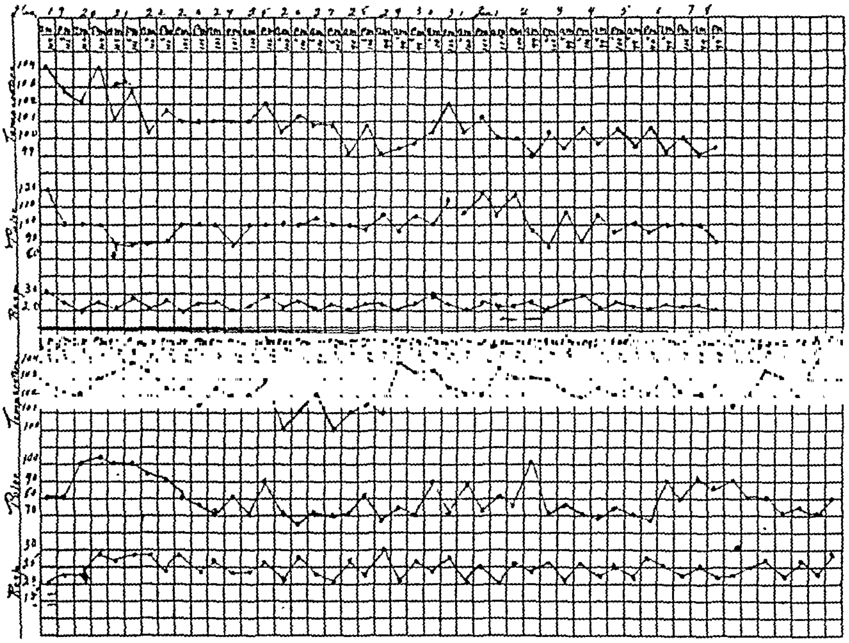

Fig. 1.—Chart showing temperature, pulse and respiration in Case 1 (upper portion) and Case 2 (lower portion).

One of the patients, aged 21, nursed an infant throughout her entire illness until she became incapacitated just prior to the fatal issue. The infant remained perfectly well. Unfortunately, no examination was made of the mother's milk for trichinae or of the infant's blood for eosinophils. Yet as far as the ultimate result is concerned, it would appear that trichinae are most probably not found in the mother's milk, or, if present, are not in sufficient number to endanger the life of the suckling babe.

TRICHINAE IN CEREBROSPINAL FLUID

That the muscular symptoms are due both to the toxemia of the parasite and to the mechanical lodgment of the worm in the muscle is too well known to discuss. That the nervous symptoms may also be due to this combination is a debated point. To decide this question, we made a lumbar puncture, Jan. 22, 1913, on the patient last mentioned.

She was admitted to the Kings County Hospital, Jan. 8, 1913, having been sick for about two weeks prior to her admission. The cerebrospinal fluid obtained, 40 c.c., came out under moderate pressure, and, on standing, showed a slight greyish-white sediment and the usual trace of albumin. Fehling's solution was not reduced. The centrifugalized sediment placed on a slide showed, microscopically, a number of lymphocytes and young actively moving trichinae about 1 mm. in length. We found six parasites under the cover-glass in the first preparation. The cerebrospinal fluid has evidently no injurious or even inhibitory effect on the trichinae; for after keeping the cerebrospinal fluid for five days in the ice-chest, actively moving trichinae could still be found. This patient died Feb. 17, 1913.

We believe that trichinae have thus been demonstrated conclusively for the first time in the cerebrospinal fluid. As there is no direct communication between the general circulation and the subarachnoid space, the trichinae must have wandered out either from the general circulation or directly from the tissues. As examination for the parasite in the blood of this patient proved negative, however, and as the cerebrospinal fluid was withdrawn the same day, it would be reasonable to suppose that the trichinae came from the nerve-tissue rather than from the circulating blood. May not the nervous symptoms be due, like the muscular symptoms, not only to the toxemia of the parasite, but also to the mechanical presence of the trichinae in the brain and cord? This brings us to the important consideration of the wandering of the trichinae in the body of the host. Let us first consider, however, the presence of the trichinae in the circulating blood.

In 1894 and 1895 Herrick and Janeway demonstrated the trichinae in the circulating blood. By their method blood is obtained from a vein and centrifugalized in a 3 per cent. acetic acid solution, and the sediment examined for trichinae. We employed this method, but neither we nor Dr. H. Joachim could find trichinae in the blood from our patients. These examinations were made from the second to the fourth week of the disease, in patients who showed numerous parasites in the muscles. There must have been hundreds of thousands of embryos continuously entering the muscle-tissue at this stage of the disease. If the circulating blood be the only path by which the embryos reach the muscle-tissue from the intestines, why did we not find them in the blood? The technic is simple and we withdrew sufficient blood, from 10 to 20 c.c. Furthermore, in an examination of the literature and by a comparison of the positive findings with the number of examinations made in suitable cases, we find that relatively few positive findings are reported. Is it not possible, nay, even probable, that Leuckart was far from wrong when he said that the trichinae in the body of the host wandered through the loose connective tissue? That the trichinae are capable of doing this is shown by their presence in the cerebrospinal fluid.

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[7] Hoyberg, H. M.: Beitrag zur Biologie der Trichine, Ztschr. f. Tiermed., 1907, ii, 209; Bilden sich bei der Trichinose toxische Stoffe? Ibid., 1907, x, i.

[8] Chatin J.: Contribution à l'étude de la trichinose, Compt. rend. Acad. d. sc., 1881.

[9] Askanazy, M.: Zur Lehre von der Trichinosis, Centralbl. f. Bakteriol., 1894, xv, 225.

[10] Romanowitch, Recherches sur la trinchinose, Ann. de l'Inst. Pasteur, 1912, p. 351.

[11] Graham, J. Y.: Beiträge zur Naturgeschichte der Trichina spiralis, Arch. f. mikr. Anat., 1897, l, 219.

[12] Frothingham, Channing: A Contribution to the Knowledge of the Lesions Caused by the Trichina Spiralis in Man., Jour. Med. Research, 1906, xv, No. 3.

[13] Stäubli, Carl: Beitrag zur Kenntnis der Verbreitungsart der Trichinenembryonen, Vrtljschr. d. naturf. Gesellsch. in Zurich, 1905, l, 163; Klinische und experimentelle Untersuchungen über Trichinosis. Verhandl. d. Cong. f. inn. Med., Wiesbaden, 1905, xxii, 353; Beitrag zum Nachweis von Parasiten im Blut, München. med. Wchnschr., 1905, No. 43.

[14] Fiedler, A.: Weitere Mitteilungen über Trichinen, Arch. d. Heilk., 1864, v, 466; Zur Trichinenlehre, Deutsch. Arch. f. klin. Med., 1866, i, 67.

The cytologic elements of the blood showed the usual changes of the disease, namely, marked leukocytosis and marked eosinophilia. The total leukocyte count varied from 14,000 to 75,200; the eosinophils as high as 83 per cent. In one of the patients, aged 27, the eosinophils decreased to 5 per cent. just prior to the fatal issue. Whether a falling eosinophilia is of any prognostic value we do not know.

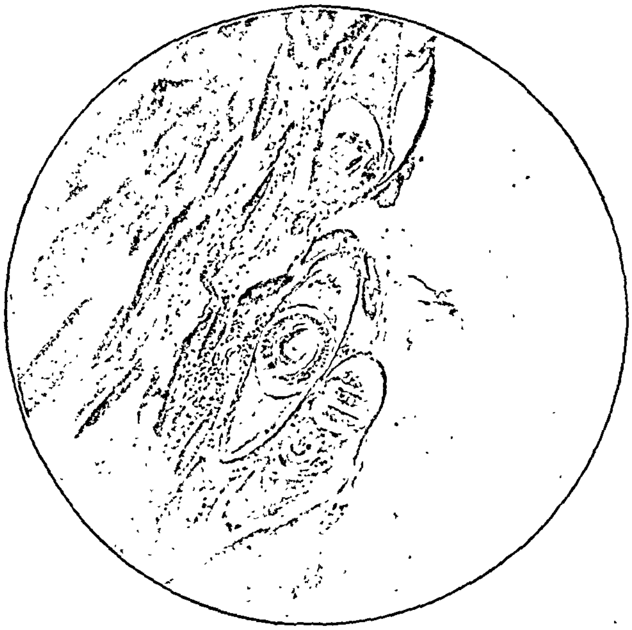

Fig. 2.—Microscopic section from biceps showing trichinae within and without the muscle fiber.

The following blood-count in one of our patients is typical of the disease at about the sixth week.

Total red cell-count	2,800,000
Anisocytosis	slight
Poikilocytosis	slight
Polychromatophilia	slight
Nucleated red cells	none
Hemoglobin	50 per cent.
Total white cell-count	28,400
Polymorphonuclears	51 per cent.
Eosinophils	39 per cent.
Small lymphocytes	4 per cent.
Large lymphocytes	2 per cent.
Basophils	4 per cent.

A more or less marked secondary anemia was present in all the cases.

The urine was negative, with the exception of the presence of albumin and granular and hyaline casts in one of the fatal cases, and the reduction of Fehling's solution by the other. The diazo reaction, as previously remarked, was constantly positive.

We found that if one wishes to keep trichinae alive, it is best to place the excised muscle in normal physiologic saline solution and keep it in the ice-chest. At the end of three weeks, we found the trichinae well preserved and actively moving. How much longer they remained so, we do not know. We found that on gentle heating of the under surface of the slide on which a piece of muscle in saline solution has been crushed beneath a cover-glass, the trichinae will at once, if alive, exhibit their characteristic spiral motion, curling and uncurling themselves for a long time. The addition of saliva sets them in active motion. This, most probably, is due to the alkaline reaction of the saliva, for the addition of weak alkaline solutions, such as sodium and potassium hydroxid, produces the same result; whereas weak acid solutions have an opposite effect.

In paraffin or celloidin sections, the ordinary hematoxylin and eosin stains bring out the parasite very well. To demonstrate the parasite in fresh tissues or solutions, no stains are, as a rule, necessary. Law and Fullerbarn's direct method of staining is satisfactory, but unnecessarily complicated. After experimentation with numerous stains and methods, we devised the following simple technic:

On slide, make thin spread of crushed muscle supposed to contain the parasite and add 1 or 2 drops of Ziehl-Neelson carbolfuchsin. Cover with cover-glass and examine; the trichinae, if present, will be stained an intense red. If permanent preservation of the specimen be desired, rim the edge of the cover-glass with petrolatum or Canada balsam. This method is very simple and highly satisfactory.

DIFFERENTIAL DIAGNOSIS

In our cases we had to exclude (1) nephritis, (2) typhoid fever, (3) meningitis, (4) muscular rheumatism.

1. The edema, the gastro-intestinal symptoms and secondary anemia suggested nephritis, but on examination of the urine that condition was at once excluded.

2. The muscular pains, the continuous moderately elevated temperature with low pulse-rate, the mental state, the marked weakness, with diazo positive suggested typhoid. The presence of a leukocytosis and eosinophilia (instead of the complete disappearance of eosinophils from the peripheral blood which occurs in typhoid patients), together with the absence both of the Widal reaction and enlarged spleen, excluded that condition.

3. The presence of the Kernig sign, the rigid neck, the mental symptoms, temperature, weakness and leukocytosis suggested cerebrospinal meningitis; but in meningitis we have with the positive Kernig, exaggerated knee-jerks, Achilles tendon reflex, and no eosinophilia.

4. The muscular pains suggested rheumatism; but in muscular rheumatism we have an absence of the signs of trichinosis, which were present in our cases. Wood, as far back as 1835, found trichinae in the muscle of a patient who died from rheumatism. Many other such findings are noted in the literature. Furthermore, Williams,[15] on examining five hundred and five bodies of persons who had died from other diseases than trichinosis, found trichinae in twenty-seven (5.34 per cent.), on microscopic examination of the muscle-tissue. These facts should teach us to excise a piece of muscle and examine, microscopically, for trichinae in all persistent

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[15] Williams, Herbert U.: The Frequency of Trichinosis in the United States, Jour. Med. Research, 1901, vi, 64.

and dubious cases of so-called "muscular rheumatism," with or without eosinophilia, for, in old cases, the eosinophilia is slight or entirely absent.

Of course, to differentiate trichinosis from any other condition, the examination of an excised piece of muscle will be final.

PROGNOSIS

The death-rate from this disease varies a great deal, as in some epidemics it is unusually high; in others, practically *nil*. *On the average, the mortality is about* 5 per cent. In our cases the mortality was 20 per cent. In the epidemic at Hedersbeer, Kratz reports 101 deaths out of 337 cases — a mortality of 30 per cent. According to the statistics of Stiles and Hassall,[16] there were in Germany, from the years 1860 to 1880, 8,491 cases, with a mortality of 513 (6.04 per cent.), and in the same country, from 1881 to 1898, 6,326 cases, with a mortality of 318 (5.02 per cent.). In children, as already noted, this disease runs a mild course.

NECROPSY FINDINGS

In the two fatal cases, Drs. Terry and Haller of the pathologic department of the Kings County Hospital, returned the following findings:

CASE 1.—Anthony G., aged 27, died in the fourth week of the disease. Pathologic diagnosis: Acute myositis, parenchymatous and fatty degeneration of the liver; acute diffuse nephritis; fragmentation of cardiac muscle; congestion of spleen; lobar pneumonia in base of right lung.

Trichinae were found in the diaphragm, in the rectus muscle and in those of the upper and lower extremities.

CASE 2.—Mary G., aged 21, died in the eighth week of the disease. Pathologic diagnosis: Pleurisy with effusion; fatty degeneration of liver; amyloid degeneration of kidneys; congestion of spleen.

Trichinae were found in the voluntary muscles throughout the body. Examination of brain and cord was not permitted in either case.

THERAPEUTICS

In the treatment of our cases we did not employ atoxyl or arsacetin, because from a review of the literature we learned that these drugs are useless in this disease. In the early stage we used cathartics and glycerin in large quantities (150 gm. per day) as recommended by G. Merkel.[17] No striking results could be seen from this treatment. The use of colonic irrigations containing antihelminthics seems to us useless, for how could it be possible for the drug to reach the upper part of the small intestine? We have had no experience with benzin, as recommended by von Mossler. We have used the various intestinal antiseptics and antihelminthics with questionable benefit to the patient. If we bear in mind that these parasites burrow beneath the epithelium of the crypts and villi, that they discharge their young, not in the lumen of the intestine, but in the tissue itself, it is hard to conceive how cathartics, glycerin, intestinal antiseptics, antihelminthics, etc., could do any good, except at the very onset of the disease, when, as a rule, the physician is not consulted.

Realizing the inefficiency of our therapy, we determined to try salvarsan and neosalvarsan in this disease, for we reasoned since it is beneficial in other parasitic diseases, it may possibly be of some benefit in this disease. Accordingly, we injected in the patients, J. R., 0.6 gm. salvarsan intravenously in the fifth week of the disease. This was only a moderately severe case. We could see no influence of the salvarsan. The blood-count in this patient will be found in the accompanying table.

TABLE OF BLOOD-COUNT IN TRICHINOSIS PATIENT J. R.

Time	Total Cell-Count		Percentages			
	Leukocytes	Red	Polymors.	Sm. Lymphos.	Eosinop.	Hb
Before injection........	18,400	5,800,000	36	25	39	78
Same day after injection.	13,900	5,200,000	49	19	32	93
Twenty-four hours later.	12,300	4,200,000	38	18	44	78
One week later.........	17,000	4,800,000	51	33	16	78

The patient made an uneventful recovery. All blood-cultures taken in these patients were sterile.

The second patient, who received 0.5 gm. of salvarsan intravenously, was severely ill from the beginning. She was in the fourth week of the disease. when she received 0.5 gm. of salvarsan. Eleven days after the injection of salvarsan she received neosalvarsan intramuscularly. After each injection pieces of muscle were removed and examined in the fresh state. Pieces of muscle were also removed before the injection of salvarsan and examined for trichinae.

We thought that after each salvarsan injection the trichinae in the muscle appeared to be swollen and less active. The trichinae in the cerebrospinal fluid, however, were very active. The subjective and objective condition of the patient grew progressively worse (See lower portion Fig. 1) and death ensued twelve days after the last injection of neosalvarsan. From our experience we do not believe that salvarsan is of any benefit in this disease. The rest of the treatment was purely symptomatic.

PROPHYLAXIS

Since we can not influence the course of this disease therapeutically, we should strain every effort to prevent this disease. As its cause and pathogenesis are well known, prophylaxis ought to be comparatively easy. In general, prophylaxis should be directed against the spread of trichinosis among pigs, the prevention of the sale of infected meat and against the ingestion of raw or only partly cooked pork. We must bear in mind that trichinosis is most frequent among the pigs of America. Reliable statistics show that the infection among pigs varies from 0.86 per cent. to 10 per cent. or even higher in some localities (Türk and Lübeck). We know that much has been said for and against the government routine microscopic inspection of all pork. We are of the opinion that the good which would follow such inspection would more than justify the expense incurred, for hundreds of lives would be saved.

We believe that trichinosis should be placed under the head of reportable diseases, so that through warning thus given the further consumption of an infected carcass may be stopped, should cases be diagnosed early enough. We could thereby avoid large epidemics.

Of course the most efficient prophylaxis is the thorough cooking of all pork. Fiedler found that heating pork to 62 or 72 degrees destroyed all trichinae present.

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[16] Stiles, C. Wardell, and Hassall, Albert: Trichinosis in Germany, Bull. U. S. Dept. Agric., Bureau Animal Industry, 1901, No. 30, p. 211.

[17] Merkel, G.: Behandlung der Trichinenkrankheit, in Penzdolt and Stintzing's Handbuch der speciellen Therapie innerer Krankheiten, Ed. 4, 1909, p. 353; Zur Behandlung der Trichinose beim Menschen, Deutsch. Arch. f. klin. Med., 1885, xxxvi, 357.

CONCLUSIONS

1. Trichinae or embryos are not found in the feces, hence these cannot be used for diagnostic purposes nor are they a factor in the spread of the disease.
2. Intestinal antiseptics are futile in this disease.
3. Children either escape infection or when infected have the disease in a mild form because they eat only small amounts of the infected meat.
4. A child is not endangered by nursing from an infected mother.
5. For the first time living trichinae have been demonstrated in the cerebrospinal fluid *in vivo.*
6. In protracted and dubious cases of chronic muscular rheumatism it is advisable to examine a piece of muscle, microscopically, for trichinae.
7. Neither leukocytosis nor eosinophilia is an index of the severity of the disease.
8. The trichinae may wander into the tissues by boring through the fibrous connective tissues.
9. It is a mistake to rely for diagnostic purposes on the finding of trichinae in the blood, because such findings are rare.
10. A new and simple method of staining trichinae may be used.
11. Salvarsan is useless, as was shown in our cases.
12. Trichinosis should be made a reportable disease.
13. Government microscopic inspection of meat for domestic use should be instituted.

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PROGNOSTIC VALUE OF SLIGHT OR TRANSIENT ALBUMINURIA

WITH SPECIAL REFERENCE TO LIFE-INSURANCE EXAMINATIONS

HENRY WIREMAN COOK, M.D.
MINNEAPOLIS

In view of the now well-established fact that infectious diseases are on the decrease and that the cardiovascular diseases show a corresponding increase, it follows that we have obviously a deep and growing concern in any sign or symptom that may antedate the establishment of a definite clinical picture of one of these latter diseases. It is of peculiar interest to us that insurance medicine has taken a more advanced position than clinical medicine in the consideration of those indications which precede the well-defined clinical picture. Only recently has general medicine, in its true and higher scope as a preventive science, given proper heed to the indications which precede active disease, with which alone it concerned itself a few years ago as a strictly curative agent.

Then medicine did not reckon with the case until the cough, fever and weakness demanded attention. Now medical school-inspection with open-air schools, playgrounds, visiting nurses and its other agencies, reckons with the family history, the exposure to contagion, the build, the habits, etc., and remedies the condition of which the clinical disease is only the closing scene. Medicine was then concerned only when headache, nausea, shortness of breath, or dropsy, caused the nephritic to seek his physician. Now the man submits to a change in diet, a cure of pyorrhea, a correction of intestinal decomposition, a drainage of the gall-bladder, etc., the indications being detected at one of the routine semiannual physical examinations at the hands of his medical adviser, and he avoids or postpones the necessity of treatment for renal insufficiency, myocarditis, or cerebral hemorrhage.

Insurance medicine has for years more or less roughly covered this position and heeded the indications which were revealed at the examination of apparently healthy, vigorous individuals. Each advance has been delayed, however, by custom and precedence. Many insurance officials can remember when the value of even the most superficial urinalysis was regarded with extreme suspicion. Few of us can remember, but we can all picture, the consternation on the part of the agency force and the half-disapproving acquiescence of the executives, when urinalysis first became a requirement.

In June, 1902, at Atlantic City, the first presentation of the value of blood-pressure estimation in insurance examinations was made by the author. It has taken just ten years to establish blood-pressure as a valued requirement in, I think, every company in this country with one notable exception. Ten years, however, is a short time and the rapid acceptance of this clinical sign is a tribute to the progressiveness and scientific equipment of our medical departments. Insurance companies have introduced and taught this sign to a majority of the practitioners of this country.

In attempting to define the prognostic value of slight or transient albuminuria, I would lay down two premises: (1) if a reliable history and thorough examination were obtainable in insurance work, the test for albumin might frequently be held negligible; (2) inasmuch as a reliable history and a thorough examination are impossible in insurance work, the test for albumin becomes the best single guide to insurability, in applicants over 40. These statements are not paradoxical.

There are no insurance statistics which are based on complete or reliable medical examinations, and probably none will ever be available. A thorough history and physical examination is only obtainable in the larger cities; it costs from $20 to $50, and requires much more time than any applicant could be induced to give. The only records of complete and thorough clinical work are found in a few hospitals related to the better medical schools, or devoted to research, or in the private records of the best trained internists.

The records of this grade of clinical work show that traces of albumin are demonstrable in association with nearly any departure from health, and under many conditions which are purely physiologic. Most diseases are accompanied by some toxemia, and most toxemias produce sufficient renal irritation to cause a transudation of albumin. In young people, particularly, many physiologic variations may produce albumin; for example, a game of tennis, any severe athletic exercise; certain foods, for example, asparagus; recent alcoholic indulgence, etc. In older men in whom albuminuria can be demonstrated, a complete clinical examination practically always reveals some other sign or symptom of disease, for example, headache, nausea, increased blood-pressure, thickened arteries, leukocytosis, anemia, fever, etc. Conversely, when traces of albumin can be detected, and no other sign or symptom can be demonstrated by the most thorough investigation, experience shows that they may be considered negligible. This condition, or the much-abused term, physiologic albuminuria, is practically confined to the second, third and fourth decades.

Cabot sums up his personal experience and the experience of the Massachusetts General Hospital as follows:

> In the absence of other signs or symptoms of disease, albuminuria is rarely of importance. Large quantities of albumin are in my experience never found without other evidences of disease. Small quantities without other evidence, when occurring at or near adolescence, are practically negligible. In later life they are practically always accompanied by other evidence of disease (that is, pyuria, fever, raised blood-pressure, headaches, etc.).

Other experienced clinicians agree in a general way with this attitude. That the deductions of life-insurance medical directors should frequently differ from those of internists is to be expected, as the basis of their judgment is very different. An internist does not venture a diagnosis or a prognosis until he has completed an exhaustive study of the case, perhaps having it under observation many days and having before him complete clinical analyses. A medical director has the results of a fifteen-minute examination, often at incompetent hands; he has the opposition of the applicant, instead of the help of the patient in detailing symptoms; and the only thorough clinical work which he can obtain is from a chemical and microscopic examination of a several-days-old 3-ounce specimen of urine.

The results of this analysis of the 3-ounce three-days-old specimen immediately takes on a far greater significance than would be vouchsafed by an internist. The internist has before him such a wealth of material, and is so sure of the accuracy of his methods and his findings that he can well afford to minimize the indications of slight variations in the albumin content of the urine. The insurance man can be sure of only one thing, and that is, that in a large percentage of cases the history will be misleading and incomplete and the examination hurried and superficial. He can, on the other hand, be sure of a thorough and delicate test for albumin in the urine passed by the applicant, and his action on a home-office finding of albumin in a case examined and recommended after a fifteen-minute observation by the average general practitioner, necessarily would frequently differ from an action that might properly be taken after a week's study of the same case by a trained internist. One test alone, the phenolsulphonephthalein test of Geraghty, would throw more light on the question of renal sufficiency than any amount of chemical and microscopic urinalysis.

I may interpolate here that, clinically, the presence of a few casts is regarded as of considerable less importance than the presence of albumin.

In insurance work we must profit as far as may be by the results of the best clinical work, but we must modify those clinical conclusions to meet the exigencies of our own specialty. Granting without argument the growing clinical opinion that in the absence of any other indication of disease the presence of traces of albumin may be largely discounted, a similar attitude toward albuminuria in insurance work would spell disaster. We may, however, still recognize the correctness of clinical data, but modify their indication when used as a basis for action as a guide to insurability. Therefore, although from the internist's point of view, an albuminuria *may* be negligible when thorough work has excluded all the symptoms and signs of disease, as insurance men, we must give most weight to Cabot's supplementary clause, that large quantities of albumin are never present without other signs or symptoms of disease, and that in men over 40, even traces of albumin are seldom present without other discoverable indications of disease. Therefore, although we cannot in insurance work profit largely from the first theorem, we can draw valuable assistance from the second: that albumin in large quantities always accompanies other indications of disease, and in men over 40, even in traces, is usually associated with disease. This clinical opinion we can translate into a ruling for insurance selection in the statement that large quantities of albumin at any age indicate *an impairment; traces in* applicants over 40 usually indicate an impairment.

When we further recognize the increasing incidence of cardiovascular and renal diseases after 40 as a factor in general mortality statistics, and especially in insurance statistics, and that traces of albumin in men over 40 are indicative of beginning cardiovascular renal disease more than of any other pathologic entity, we must appreciate the importance of a method which will permit us to say that this applicant is or is not passing albumin with a workable quantitative estimate. The fact that the local examiner reports albumin "absent" is only slightly more reliable as a guide to the presence or absence of albuminuria than his assurance, before the use of the sphygmomanometer, that the pulse-tension was normal. If 25 per cent. of the cases of albuminuria are reported with positive findings by the average examiner of an insurance company, it is better than experience shows us we should expect.

A full examination of an applicant by an expert internist will never be practical, but it is practical to have an expert urinalysis on every applicant, when it may be desired. Companies which require home-office urinalysis where the amount applied for is $25,000 or over, find no difficulty in obtaining compliance. Companies which require it in applicants for amounts of or over $10,000 or $5,000 obtain it with equal ease. Companies which desire it in applicants over 40 or 45, or in all cases, can have it by asking for it.

To repeat, in view of the following facts: the increasing incidence of the cardiovascular renal diseases; the almost constant association of these diseases with albuminuria; the clinical experience that albumin even in small amount in men over 40 means that other signs or symptoms of disease are discoverable; that only a small proportion of general practitioners will detect albumin in traces, and many will overlook it in large quantities, or make no urinalysis at all; that authentic, well-preserved specimens can readily be submitted to expert analysis—it would seem that the day is not far distant when the urinalysis portion of an insurance examination, at least, will be accurate, and as far as chemical and microscopic examination of the urine may aid us, we shall act intelligently and not blindly.

This does not necessarily mean that we shall reject or consider impaired every case which shows a trace of albumin. We ask if the pulse is regular, but we do not therefore necessarily consider a robust young man of 20 impaired, whose heart has an extra systole now and then during an examination. If the man was over 50, even an occasional irregularity would make us rightly suspicious of myocarditis. But, because we now and then approve an irregular or a rapid heart, shall we therefore give up an examination of the pulse? We will frequently accept an otherwise robust young man with a slight albuminuria, but should we therefore forego the opportunity to reject the man of 50 with slight albuminuria and cylindruria who probably has interstitial nephritis?

It should not be misunderstood that the opinion is here advanced that in insurance medicine albuminuria at any age is not worthy the most careful consideration. Frequently and at all ages it has instigated further investigation which demonstrated serious impairment, either true nephritis, or in some cases, obscure tuberculosis, serious gastro-intestinal disturbance, etc. Our knowledge of this subject to-day is most obscure in comparison with the knowledge that we may one day expect to have; but there have been definite advances already both in methods and in the interpretation of findings, and we may properly attempt to redefine our position from time to time, bringing it as far as possible in accord with present knowledge.

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The result of an analysis of some recent urinalyses made at our home office lends further evidence to the general correctness of the clinical opinion as to the relative significance of traces of albumin. We have come to feel that at all ages, but particularly after 45, positive knowledge as to the presence of albuminuria is a most valuable aid in medical selection, both when appearing as the only impairment and when associated with other impairments in family or personal history, physical examination, or habits, and we further feel that the only positive way to obtain this information is to have the urine examined at the home office. We believe that the recommendation of a more delicate test, such as Ulrich's, for use by examiners, would give us this knowledge in a larger proportion of cases than we obtain it at present.

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Probably most practitioners are not familiar with the location of the interlobar spaces, and it would be advisable for clinicians to accustom themselves to locate the boundaries of the lobes. The upper lobe of the right lung is separated from the lower by a fissure which starts at the spinal column on a level with the spine of the scapula, and runs outward, downward and forward to the fourth rib in the midaxillary line, where it divides into two secondary fissures. The superior or uppermost of the secondary fissures runs almost horizontally forward and reaches the anterior border of the lung at about the level of the fourth cartilage. The lower fissure passes downward and slightly forward to the lower border of the lung in the mammillary line. The middle lobe of the right lung lies between these two secondary fissures. The left lung has but two lobes, and the fissure, which begins and extends as in the right lung, does not bifurcate in the axilla, but passes downward and forward to end at the sixth rib in the left mammillary line.

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December 27, the pulse, which had been regular and of good volume, suddenly became irregular. There was no dyspnea or cyanosis, but the breathing varied from 38 to 44 per minute. In spite of digitalis the radial pulse continued to be very irregular and intermittent. There were 84 to 90 pulsations present in the radial artery, but at the apex, 112 to 140. The temperature continued to range from 102 to 103 until December 29, or the eighth day, when it declined to 98 4/5. The bronchial breathing continued over the area of consolidation, but the chest posteriorly was clear. The temperature continued irregular, going from 98 4/5 to 101 1/2, and at times the patient would feel a little chilly, but there were no profuse sweats.

The leukocytes on December 31 numbered 16,000; January 1, 12,500; January 2, 11,000, and the case at this time looked like one of slowly resolving pneumonia. January 3 the leukocytes numbered 15,900, and they continued between 15,000 and 19,000 for the following eight days.

January 4 and 5, the patient hiccoughed a few times. After January 6, the hiccoughing became more persistent in spite of compound spirit of ether, spirit of chloroform, milk of magnesia and the bromids, and the only remedy which at all controlled the spasms was morphin. Mustard plasters were applied over the right base anteriorly, as well as dry cups, and freezing the right phrenic nerve in the neck was also tried without avail. January 11, galvanism to the right phrenic was administered. This apparently did not affect the hiccoughs, but it was reapplied the next day, January 12.

A few hours after the second application the hiccoughs ceased, and did not return. During this period of more or less continuous fever, Dr. J. H. Musser and I went over the patient's chest daily in the expectation of finding an abscess or an empyema. The physical signs were as follows: The area of consolidation at the right base anteriorly, gradually cleared up, so that by January 3 the region was clear except that there was anteriorly a triangular area of dulness extending from the third interspace to the upper border of the liver and from the right border of the sternum downward and outward to a point at the upper border of the liver dulness about 1¼ inches to the right of the right border of the sternum. The breathing over this area was bronchial. The heart-sounds were not distant or muffled, and the apex was not displaced, although irregularity of the heart's action continued, so that pericarditis was excluded.

January 10 the breath-sounds at the right base posteriorly were very distant and afterward vocal and tactile fremitus were reduced. At that time two exploratory punctures were made in this region; one in the seventh interspace, near the angle of the scapula, the other in the ninth interspace. They were both unproductive. January 11 an area of dulness and distant bronchial breathing was found, oval in shape, with the center at the inner border of the scapula, extending 1½ inches externally and internally from this border, and from the angle to the spine of the scapula. On January 12 Dr. R. H. Harte made an exploratory puncture in the fifth interspace posteriorly near the center of this area. He obtained about a dram of bloody fluid, which on microscopic examination was found to contain many pus-cells. Next day, under ether anesthesia, he resected 1½ inches of the fourth rib and evacuated about 3 ounces of pus and a considerable amount of tough gelatinous slough. The cavity extended about 2½ inches inward and anteriorly toward the center of the thorax. Two large rubber drainage-tubes were inserted and the patient kept in the dorsal position as much as possible. The pulse, which had continued irregular and intermittent up to the time of the administration of the anesthetic, became regular and continued so from that time on.

The temperature continued between 101 and 100 for two days. On the 15th, 16th and 17th it gradually declined, becoming normal on the 17th. It continued somewhat irregular, with occasional rises until January 21. On the 22d there was another short rise, with an increase of the number of leukocytes, and it was found that the drainage-tubes were blocked with lymph. After these had been cleared the temperature again became normal and continued so from January 25 to February 1. From February 1 to February 11 the temperature was again irregular, being 98 or 98 2/5 in the morning, and 99 4/5 to 100 2/5 in the evening. There was during this time a considerable amount of thin purulent discharge from the wound.

Dr. Harte began the use of bismuth paste about February 7, and by February 11 the temperature had become normal and remained so after this time. The injections of bismuth paste were continued twice a week, and about 1 dram of the paste was used at each injection. Probably half of this was found on the dressings when the wound was dressed the following day. About March 1, the patient noticed pigmentation in the gum around one or two of his teeth, and on examination a blue-black granular deposit was found at the margin of the gum, similar to that seen in chronic lead intoxication. The blood was examined by Dr. C. Y. White who reported that there was no basic granulation of the red corpuscles, and it was, therefore, assumed that the pigment deposited in the gum was due to bismuth sulphid. The paste used was composed of 50 per cent. bismuth subnitrate in petrolatum. The line on the gums gradually disappeared. March 16 the patient was removed to Atlantic City, as the wound was discharging very little, and the sinus gradually healed, but did not entirely close until May 23. Since the evacuation of the interlobar empyema there has been no return of the irregularity of the pulse, at no time has there been evidence of any myocardial weakness and active exercise has not caused dyspnea or discomfort.

The second case is of interest, owing to the occurrence of pneumonia and interlobar empyema in the course of a typical attack of typhoid fever.

Case 2.—The patient, a native of Poland, aged 22, was admitted to the wards of the Episcopal Hospital, April 9, 1913, with a temperature of 105 4/5, respirations 32, and pulse 108. His lungs showed no consolidation, but there were many fine moist râles at both bases. There were numerous typical rose spots. The spleen was distinctly palpable. April 10, the Widal was reported positive. The leukocytes on April 10 were reported as numbering 13,200; on the 12th, 6,400.

The temperature continued high, ranging between 103 and 104½ until April 26, when it began to decline, going down to 100 and rising to 103½. May 4 the temperature rose to 106 3/5 and on the 5th had declined to 99¾. It rose again on the 7th to 105 and declined to 99 at noon of the following day. The temperature continued intermittent with sharp rises and abrupt declines up to the time of operation on May 22. The leukocytes on April 19 were 12,000; April 29, 24,000; April 30, 19,000; May 1, 17,200; May 4, 14,320; May 6, 15,680; May 13, 30,400; May 14, 29,600; May 17, 40,080.

April 22 the condition of the patient was good, with the exception of high temperature, and the chest was clear. May 4, after the rise in temperature to 105 3/5, numerous moist râles were heard over both lungs. There was no impairment of resonance. May 8 very numerous moist râles were heard over both lungs, and there was impairment of resonance over both bases. Examinations were difficult and unsatisfactory on account of the facts that the patient was delirious and that the whole chest was so full of bubbling râles as completely to mask the breath-sounds. It seemed as though he had a very marked pulmonary congestion, and until May 8 it was impossible to discover any change in the breath-sounds. The area of impaired resonance at this time extended on the right side from the spine of the scapula to the base.

On May 12 the râles were less numerous over the left lung, but were marked over the right. Over the right base posteriorly the tactile and vocal fremitus were not impaired. Breath-sounds were distinctly heard, the expiration was harsh and the inspiration prolonged. Paracentesis in the eighth right interspace posteriorly was negative. On May 15 the right base posteriorly was flat, extending from the spine of the scapula to the base and to the posterior axillary line. Paracentesis in the seventh and ninth interspaces were both negative. May 18 there was marked flatness below the spine of the scapula, and an exploratory puncture was made in this region with a negative result. May 19, with a new syringe, paracentesis was again performed, this time in the third interspace, since a diagnosis of interlobar empyema had been made, and this time pus was obtained. A roentgenogram taken on May 10 showed a dense area in the upper part of and along the outer border of the right lung.

The diagnosis being an empyema in the interlobar septum, the patient was transferred to the surgical ward to the service of Dr. L. H. Mutschler. On May 22 Dr. Mutschler made a small incision over the sixth rib in the midaxillary line, and resected a portion of this rib. A considerable amount of pus exuded. A large rubber drainage-tube was inserted. The discharge continued very free and the patient had considerable cough until June 20, when there seemed to be more improvement. June 27 the discharge was less, and the drainage-tube was removed. July 5 the patient was sitting up in bed, and the general condition was very much better. July 12 the discharge had ceased. July 17 the wound was closed, and July 22 the patient was discharged, cured.

1606 Walnut Street.

RUPTURE OF THE UTERUS FOLLOWING CESAREAN SECTION

WITH A STUDY OF THE UTERINE SCAR

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The enlargement of the field of cesarean section marks one of the advances of modern obstetrics. This operation is being performed for other indications than those of contracted pelves and tumors blocking the pelvic canal. Certain cases of eclampsia and certain cases of placenta praevia, as well as cases which show physiologic incompetence for labor, are being terminated by cesarean section.

Obstetrics has always been a conservative branch of medicine and surgery, in fact, ultraconservative, and it is reluctantly yielding to cesarean section those cases which were formerly treated by high forceps operations, *accouchement forcé*, and version. Does it mean that those operations that have served us so well in the past are to be relegated to the background? If section has been elected and the case is a clean one, the obstetrician rarely regrets that cesarean section was decided on, whereas only too often he feels humiliated for having done the other thing. In most instances the immediate results are good. The child is sound, healthy and free from birth-pressure; while the mother soon convalesces, her birth-canal intact, free from trauma and lacerations —with one exception, the uterine incision.

With these facts before us, we are accumulating in our midst a number of cesareanized women—some with contracted pelves, others with normal pelves—who are going about with scars in their uteri. The consensus of opinion of most obstetricians is that these women need not be sterilized. If this be true, how about subsequent pregnancies? If the woman has a contracted pelvis there is no question as to the management; she is again sectioned. If the pelvis is normal, however, how should the case be managed? With this question in mind, I wish to report the following case.

Previous History.—Mrs. N., at the age of 17, had a cesarean section performed at term, March 29, 1909, although measurements of pelvis were normal because a large hematoma blocked the pelvic canal. The records are as follows: A longitudinal incision, 10 cm. long, was made in the anterior wall of the uterus. The membranes were ruptured artificially and the child was delivered. Placenta and membranes were removed manually. The myometrium was drawn together with twenty-day chrome catgut. Sutures were interrupted and did not pass through the serosa or the endometrium. Serosa was closed with a continuous suture of twenty-day chrome catgut and reenforced with a continuous suture of the same material. On the third day the temperature rose to 38.8 C. (101.8 F.), and on the fifth day a profuse purulent discharge from the vagina made its appearance. On the eighth day the temperature was 39.2 C. (102.5 F.), and on removal of the abdominal stitches a stitch-abscess was discovered and drained. Gradually the temperature dropped and from the fourteenth day remained normal. Patient was discharged on the twenty-sixth day in the following condition: perineum firm, uterus anteverted and anteflexed, movable, slightly tender; external os closed. In January, 1911 this woman became pregnant, made application to the San Francisco Maternity Hospital, and came into my service about June 1, 1911. Pregnancy was uneventful. She was delivered spontaneously through the vaginal route. Oct. 29, 1911. Mother and child did well. Puerperium was not complicated by fever or hemorrhage, and both were discharged on the tenth day in very good condition.

Last Pregnancy.—This patient was again admitted to my service at the University of California Hospital, April 8, 1913. She had flowed last, July 29, 1912, which would bring her date of expectancy about May 5, 1913. That she was pregnant again was not known to my service; we first learned of her condition when we were summoned to her home. When the woman was recognized she was ordered to the hospital at once. On admission the patient did not feel as though there was anything radically wrong with her. She complained of indefinite irregular pains, not strong in character. Her abdomen was distended and she looked as though she were at term. Temperature was 37.6 C. (99.4 F.), pulse 100, respiration 24. There was no nausea, no evidence of hemorrhage, and she was free from shock. Abdominal examination was not satisfactory. I could not map out the position nor could I get the fetal heart. The patient said she had felt life until the evening of April 7, when what she thought were labor pains set in. After twenty-four hours in the hospital her bowels were moved, followed by the expulsion of much gas. The patient felt more comfortable, got out of bed, walked to and from the toilet and sat up in a chair. Her walk, however, was peculiar. She would bend over and hold the lower part of her abdomen with both hands, contrary to the attitude assumed by the normally pregnant women at this particular time.

Examinations.—A careful abdominal examination made at this time gave the following data: Breech above, back anterior and to the left, small parts could not be felt, head was below, above the brim, movable, and a suggestion of crepitus of the bones of the fetal head was obtained. No fetal heart-beat audible. On account of the presence of a dead fetus and these indefinite pains, we decided to bring on labor. Heretofore we had purposely avoided making vaginal examinations as the possibility of a cesarean section had to be considered. Under the most careful aseptic technic, however, a vaginal examination was made. I found the vulva of multiparous character. The vagina was roomy and free from blood. The cervix was thick, not soft, and the cervical canal was not obliterated. The external os would barely admit one finger. With a little pressure I introduced my index finger into the lower uterine segment and to my surprise found it empty. Then only did I realize that I was dealing with a case of rupture of the uterus. The patient was sent to the operating-room where, with Dr. Pope, I opened the abdomen.

Operation and Result.—A left rectus incision about 15 cm. in length was made with the umbilicus in the center. On opening the peritoneum the intact bag of waters containing the fetus was seen free in the abdominal cavity, lying in the left occipito-anterior position. The membranes were ruptured and the dead baby was delivered. Following the umbilical cord, we came to the placenta, lying on the external anterior surface of the uterus. This was removed manually. The uterus was fairly well contracted. After separating two omental uterine bands of adhesions, the uterus was examined and the saving? Second, Is it technically possible to bring such a testicle into the scrotum in a manner that will preserve its vitality? With these points in mind I have studied the histology of undescended testicles removed at operation, the literature on the subject and the end-results of sixteen operations in which I have placed the testicle in the scrotum.[3]

This study is limited to cases of undescended testicle as distinguished from those of malposition of the organ.

The undescended testicle may occupy any position in the normal route of descent of the gland. Three general divisions are made, (1) abdominal, (2) inguinal and (3) puboscrotal, these divisions being made by the relation of the testicle to the internal and external abdominal rings. One form may pass into the other according to various circumstances. For instance, a testicle arrested in the inguinal canal may gradually pass down outside the external ring and even into the normal position in the scrotum. The last-mentioned result is rarely observed except in childhood. Or, an inguinal testicle may be forced back into the abdomen by external violence or muscular contraction.

In the older literature practically all the attention is concentrated on the occurrence of malignant change in an undescended testicle, and consequently excision was the only treatment considered. Later study shows the frequency of malignant disease in undescended testicle to be less than was supposed and nearly always to occur in cases of inguinal retention, in which the greater exposure to trauma explains susceptibility to malignant change. As will be shown later, it is in this inguinal form of non-descent that the operative treatment is most successful in securing both normal position and good nutrition for the testicle.

The histology of the undescended testicle varies in wide limits. A very complete study of the pathology of the undescended testicle has been published by Uffreduzzi.[4] He distinguishes four types of undescended testicle: (1) those with few signs of disturbed development; (2) those with marked disturbance; (3) those showing distinct senile retrogression, and (4) those consisting largely of edematous fibrous interstitial tissue.

The changes occurring at puberty in the normal testicle seem delayed in the undescended gland. This is indicated for the most part by the persistence of the interstitial cells in large numbers. In the specimens which I have examined, spermatogenesis was observed in three of the seven cases in which the testicle was removed from young adults. This proportion of spermatogenic activity is about the same as that reported by Odiorne and Simmons,[5] who found adult spermatozoa in four of nine testicles examined, and a few tubules containing spermatogonia in one of the remaining five cases. In the remaining cases the histologic picture resembled the infantile type of testicle four times, and the senile testicle twice.

Imperfect development of a portion of the genital organs in embryonic life gives an abnormal testicle, which does not descend but is retained in the abdomen. With such a testicle the inguinal canal on the same side is usually closed tight, the scrotum atrophied, and the vas and seminal vesicle insignificant. This form of undescended testicle cannot be improved by surgery and seldom requires any treatment. The glandular epithelium, if formed at all, soon degenerates and is absorbed, leaving a fibrous mass to represent the testicle.

On the other hand, there are undescended testicles which have the normal structure of the infantile testicle, but which fail to develop into the adult type when allowed to remain in the abnormal position.

Finally, there are undescended testicles in which spermatogenesis and the other changes characteristic of the adult form develop at puberty, but in which senile changes resulting in atrophy occur very early, unless the testicle is brought into its normal position.

In the two varieties last named the testicle is almost always associated with a congenital inguinal hernia and has a normally developed vas and seminal vesicle. They are usually situated in the groin, or in the abdomen close to the internal abdominal ring. The spermatic vessels and the vas with its blood-supply may be contained in a mesentery-like fold of the peritoneum, a persistence of the fetal mesorchium; but there is no regular relation of position of testicle with histologic structure or development, and the abdominal or inguinal gland may be fibrous and entirely undeveloped.

These three varieties are examples of the views of Hunter, of Curling and of Monod and Arthaud, respectively, on the cause of the imperfect function of the undescended testicle.

Whether or not a gland of the infantile type will develop all of the adult characteristics after transplantation into the scrotum is not certain. The transplantation undoubtedly is a factor in the production of those changes which are associated with the development of secondary sexual characteristics.

It is difficult to arrive at a conclusion regarding the subsequent development of the spermatogenic function in these infantile glands. Experimentally, with dogs, Griffiths[6] has proved the converse to be true, namely, that when the fully descended testicle is replaced in the abdomen the gland becomes soft and small and never shows active spermatogenesis. Schmidt[7] shows that when the immature testicle is transplanted into the abdomen, it develops to the extent of forming spermatocytes, but then gradually degenerates. In man it is probable that spermatogenesis when developed persists for only a short time, and that the testicle rapidly passes into the senile form.

It is generally agreed that the testicular changes incident to puberty are delayed or prevented by the faulty position of the undescended testicle. It is, therefore, important to transplant such testicles into the scrotum before puberty. Spontaneous descent may occur in young children, but is rare after ten years. It is at this
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One can readily understand how a uterus containing a scar, the result of improper healing, could rupture if it were overdistended as in excessive liquor amnii, twin-pregnancy, or as the result of intra-uterine manipulation. Another factor that may weaken a scar that has healed by granulation is the implantation of the placenta on it. A study of sections taken from the edges of the uterine wound demonstrated the fact that in my case the implantation of the placenta on the scar certainly weakened it so that with the first contractions the increased tension caused the uterus to rupture.

How does the implantation of the placenta on the scar weaken it? Starting in with an infected uterine wound, the scar that results contains granulation tissue, no matter how slight. This soft connective tissue soon becomes covered with endometrium and the uterine glands penetrate it. As pregnancy ensues the endometrium is converted into decidua which forms a looser and softer tissue. Trophoblastic tissue and chorionic villi, with their burrowing and penetrating properties, invade the loosened and softened scar and weaken it so that it is a question whether or not it can stand the strain and stress of labor.

A peculiar feature about my case was the comparative absence of symptoms and the mildness of those present. As a rule, one can generally obtain a history of a sharp, shooting pain in the abdomen followed by a sensation as if something had given way. In some instances the patient may collapse as a result of shock, but this was not true in my case. Hemorrhage was also absent. The only symptoms of which the patient complained were (1) slight bearing-down pain, irregular and indefinite in character; (2), a feeling of weight in the lower abdomen, more marked on standing. The signs that I secured on examination were: a slightly distended abdomen with a history of constipation, absence of nausea and vomiting; no fever. Abdominal palpation gave very few data. I mapped out the fetus as if it occupied the left occipito-anterior position, and when we opened the abdomen, there it was, wedged in in that position. I am repeating these symptoms to show how insignificant they were, while the patient was going about with the child and secundines in her abdominal cavity. Williams[8] of Johns Hopkins, says that "in some cases the patient merely complains of malaise, grave symptoms only occurring later as the result of infection or putrefaction of the fetus. Thus, in one of my cases, two weeks elapsed before the appearance of alarming symptoms." Hartman[9] has drawn similar conclusions; he says: "These cases seem peculiar in that the patients complain of very little pain at time of rupture and seem much less disturbed than in cases in which rupture had occurred without section." The fact that vaginally I could not feel the presenting part was conclusive evidence to me that the uterus had ruptured and that the fetus had escaped into the abdominal cavity.

Just a word as to the operative treatment. Each case is a case *per se*. If the rent is a partial one, or one the margins of which are not jagged, the operator can resect the scar tissue, freshen the edges and sew up the wound; on the other hand, if the tear is extensive and irregular, it is far better to do a supravaginal amputation. In case the mother has two children or more, and the uterus is left behind, I would certainly sterilize her unless the parties concerned object.

CONCLUSIONS

1. A cesareanized woman who gives a history of an infection with a purulent vaginal discharge in the puerperium is a good candidate for rupture of uterus in one of her subsequent pregnancies.
2. The mere fact that a cesareanized woman has delivered herself spontaneously is no reason for believing that she is free from the danger of rupture of the uterus with her future pregnancies.
3. Rupture of a cesarean-section scar generally takes place in a scar resulting from improper wound-healing in the presence of infection.
4. The implantation of the placenta on the site of the scar may so weaken the uterine tissue that it may rupture under the strain and stress of labor.
5. I firmly believe that cesarean section should be limited to those cases in which it is strictly necessary. If there is any possible chance for the uterine wound to become infected, some operative measure for sterilizing the patient should be employed.
6. A cesareanized woman should be in a maternity hospital during the last month of her subsequent pregnancies so as to be under constant medical supervision.

240 Stockton Street.

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[8] Williams: Obstetrics. New York, D. Appleton & Co., p. 861.
[9] Hartman: Ztschr. f. Geburtsh. u. Gynäk., 1908, No. 62.

THE CONSERVATIVE TREATMENT OF UNDESCENDED TESTICLE *

ALEXIUS McGLANNAN, M.D.
BALTIMORE

Although more than thirty years have passed since Schüller[1] described his operation for bringing the undescended testicle into the scrotum, and although in this time many other observers have reported series of cases and personal experiences, many surgeons still doubt the practicability of the operation and in dealing with this condition advise excision of the undescended testicle as the operation of choice.

Rawling[2] is the most prominent advocate of excision as the operation of choice, his conclusions being based on a study of the results of 120 cases.

Opposed to Rawling we have on the other hand numerous reports, including those of Brocha, Bevan and Coley.

The important questions to be decided regarding this operation are, first: Is the non-descended testicle worth rupture was seen to have taken place in the old cesarean section scar, extending from the internal os to within 1 or 2 cm. of the fundus. There was no free blood in the abdominal cavity. A black clot was seen lying on the left broad ligament; this was removed. A supravaginal hysterectomy was performed. The left ovary was left behind and the cervical stump, covered with peritoneum, was suspended to the round ligaments. The abdomen was closed, leaving a drain at the lower end of the incision. At midnight the temperature was 38.4 C. (100.1 F.), but in the morning it had returned to normal and stayed there. The postoperative condition was uneventful. The patient was up on the fifteenth and was discharged on the nineteenth day.

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* Read before the Southern Surgical and Gynecological Association, Atlanta, Ga.
[1] Schüller: Ann. Anat. and Surg., 1881, iv, 89.
[2] Rawling: Practitioner, London, August, 1908, p. 250.

Pathologic Report.—Gross Description: Specimen is a puerperal uterus, 5 by 4 by 2.5 inches. The right tube and ovary are attached; the left are absent. Round ligaments are readily identified. Anterior surface of uterus presents a longitudinal groove. The hysterectomy was done in the region of the internal os. On the right side the os has a normal appearance, while on the left the anterior margin of the internal os is destroyed. Just above where the anterior margin should be is a ragged edge, probably the seat of rupture. On the anterior surface above, 1 inch from a line joining the tubes, 1½ inches from the median line, is an adhesion ¼ inch thick. A similar adhesion on the left side is 1½ inches from the median line and arises from the fundus. This adhesion has the appearance of omentum. The former one seems fibrous. Posterior surface of the uterus is normal.

Microscopic Examination: Sections from the edge of the rupture show, in many places, intense leukocytic infiltration. For the most part this is confined to the superficial portion of the decidua, but thrombosed veins also occur in the upper part of the uterine muscle. The decidua around the upper portion of the rent corresponds in appearance to the decidua vera. It is made up of glands between which lie typical decidual cells and there is no invasion of trophoblastic elements. The decidua covering the median and lower portions of the edges of the rupture corresponds to the decidua serotina. Many trophoblastic elements are present here, and for the most part consist of syncytial masses, though isolated cells also are found. The muscle beneath the decidua is extensively invaded by trophoblastic elements. The invasion, however, is limited to the muscle immediately beneath the decidua and does not differ from the normal appearance of this region. The musculature in the deeper portion of the section toward the peritoneal surface is normal in appearance except for the fact that the lymph-channels are distended and in some instances filled with small round cells.

From this case we see that a cesareanized woman may have a subsequent pregnancy terminated in one of two ways if left to herself, namely, she may deliver herself spontaneously through the vaginal route, or she may terminate with rupture of the uterus. Neither of these is the usual course. Some of the cases miscarry, but the majority have to be delivered by repeated cesarean section. True, rupture of the uterus following section is rare, but it is not so rare that men doing cesarean section can overlook the probability of its occurrence. In 1908 Broadhead[1] of New York collected nineteen cases from the literature and added one of his own. Up to date, I have found forty-one cases in the literature, my own[2] making forty-two. I want to emphasize the statement that rupture of the uterus following cesarean section is not so rare as Olshausen[3] would lead us to believe. Vasseur estimated that rupture occurred in 2 per cent. of cases. Von Leuwen's figures are, if anything, higher.

Where does the rupture take place? Generally in the scar, but not necessarily so. In Lihotzky's case, five years after section, the rupture did not occur in the old scar, but in the uterine muscle some distance from the scar. In the Dresden clinic a case occurred in a patient who had been delivered by section two years previously for eclampsia. In a second pregnancy induced labor was undertaken outside of the clinic, and the patient was brought into the hospital with symptoms of peritonitis. On performing section the child and placenta were found in the abdominal cavity, and the uterus had ruptured through the right cornu, but not in the scar. Mason and Williams[4] of Boston, in 1910, made an experimental study of the strength of scars in the uteri of pregnant guinea-pigs. They excised areas of muscle-wall containing the old scar and stretched the tissue to the point of tearing. On examination of the lacerations thus produced they proved to their satisfaction that the tissue gave way not at the scar but through normal muscle-fibers. As a result of this fact they have drawn this conclusion: "A carefully sutured and well-united scar will stand any strain which can be endured by the uterine muscle." James A. Harrar[5] of New York cites a "case of rupture occurring after three cesareans. The rupture took place with the onset of labor in a uterus already distended by an overtime child; the rent taking place in the narrow segment of apparently normal muscle tissue isolated between two closely approximated parallel scars, this strip of tissue being intrinsically weaker on account of previous section of its blood- and nerve-supply."

Men who are doing repeated cesarean sections are in a position to give us much valuable information as to the condition of the uterine scar of former sections. McPherson[6] of the New York Lying-In Hospital reports on fifty cases of multiple cesarean sections. In forty-two cases the scar, as observed at subsequent sections, was either not to be seen or was described as solid, with no apparent thinning or stretching. Harrar says that in four instances in which he had occasion to perform repeated cesarean sections, the scar in the uterus has been represented merely by a slightly depressed linear whitening of the visceral peritoneum. Such scars heal by first intention in the absence of infection. If a section of the uterine muscle containing such a scar is examined microscopically, one would see no connective tissue present, or very little; but what is more important would be noted—that the muscle-fibers have completely regenerated themselves and show a normal structure.

Where healing of the uterine wound takes place by second intention, the picture is entirely different. These scars are often thin as a result of gaping of the inner layers of the wound, or as a result of sloughing of the uterine tissue. Sections show that the muscle-tissues of both margins of the original incision are separated, having healed by granulation. I have seen scars that consist merely of the serosa and subserous layer. Certain scars have healed partly by primary union and partly by granulation. These scars are just as apt to give as those that have healed improperly throughout their entire extent. Jolly[7] of the Frauenklinik of the University of Berlin cites just such a case. His patient had a rachitic pelvis. Her third pregnancy was terminated by cesarean section. She had fever for eight days after the operation, but was discharged well with her child on the twenty-second day. At the end of her following pregnancy, she entered the hospital to be delivered by section. Labor pains began soon after her entrance and became vigorous. While the patient was in transit from the ward to the operating-room, uterine rupture took place. Section was quickly performed. The child and placenta were found in the abdominal cavity; the child was living and was immediately delivered. The uterus had ruptured in the previous scar. Hysterectomy was performed, leaving the ovaries. Mother and child left the hospital well on the twentieth day. On examination of the uterus, it was found that the scar had separated through half its extent; the remaining half was firm and could be detected only by the white line in the overlying serosa.

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[1] Broadhead: Am. Jour. Obstet., 1908, lvii, 650.

[2] The author would be glad to send a list of these cases to anyone interested.

[3] Olshausen: Ztschr. f. Geburtsh. u. Gynäk., 1905, liv, 369; lv, 415.

[4] Mason and Williams: Boston Med. and Surg. Jour., Jan. 20, 1910, p. 65.

[5] Harrar: Am. Jour. Obstet., 1912, lxv, 808.

[6] McPherson: Bull. New York Lying-In Hospital, vii, No. 4, p. 181.

[7] Jolly: Arch. f. Gynäk., 1912, xc, No. 2.

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Although more than thirty years have passed since Schüller[1] described his operation for bringing the undescended testicle into the scrotum, and although in this time many other observers have reported series of cases and personal experiences, many surgeons still doubt the practicability of the operation and in dealing with this condition advise excision of the undescended testicle as the operation of choice.

Rawling[2] is the most prominent advocate of excision as the operation of choice, his conclusions being based on a study of the results of 120 cases.

Opposed to Rawling we have on the other hand numerous reports, including those of Brocha, Bevan and Coley.

The important questions to be decided regarding this operation are, first: Is the non-descended testicle worth saving? Second, Is it technically possible to bring such a testicle into the scrotum in a manner that will preserve its vitality? With these points in mind I have studied the histology of undescended testicles removed at operation, the literature on the subject and the end-results of sixteen operations in which I have placed the testicle in the scrotum.[3]

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[8] Williams: Obstetrics, New York, D. Appleton & Co., p. 861.

[9] Hartman: Ztschr. f. Geburtsh. u. Gynäk., 1908, No. 62.

* Read before the Southern Surgical and Gynecological Association, Atlanta, Ga.

[1] Schüller: Ann. Anat. and Surg., 1881, iv, 89.

[2] Rawling: Practitioner, London, August, 1908, p. 250.

This study is limited to cases of undescended testicle as distinguished from those of malposition of the organ.

The undescended testicle may occupy any position in the normal route of descent of the gland. Three general divisions are made, (1) abdominal, (2) inguinal and (3) puboscrotal, these divisions being made by the relation of the testicle to the internal and external abdominal rings. One form may pass into the other according to various circumstances. For instance, a testicle arrested in the inguinal canal may gradually pass down outside the external ring and even into the normal position in the scrotum. The last-mentioned result is rarely observed except in childhood. Or, an inguinal testicle may be forced back into the abdomen by external violence or muscular contraction.

In the older literature practically all the attention is concentrated on the occurrence of malignant change in an undescended testicle, and consequently excision was *the only treatment considered.* Later study shows the frequency of malignant disease in undescended testicle *to be less than was supposed and nearly always to occur* in cases of inguinal retention, in which the greater exposure to trauma explains susceptibility to malignant change. As will be shown later, it is in this inguinal form of non-descent that the operative treatment is most successful in securing both normal position and good nutrition for the testicle.

The histology of the undescended testicle varies in wide limits. A very complete study of the pathology of the undescended testicle has been published by Uffreduzzi.[4] He distinguishes four types of undescended testicle: (1) those with few signs of disturbed development; (2) those with marked disturbance; (3) those showing distinct senile retrogression, and (4) those consisting largely of edematous fibrous interstitial tissue.

The changes occurring at puberty in the normal testicle seem delayed in the undescended gland. This is indicated for the most part by the persistence of the interstitial cells in large numbers. In the specimens which I have examined, spermatogenesis was observed in three of the seven cases in which the testicle was removed from young adults. This proportion of spermatogenic activity is about the same as that reported by Odiorne and Simmons,[5] who found adult spermatozoa in four of nine testicles examined, and a few tubules containing spermatogonia in one of the remaining five cases. In the remaining cases the histologic picture resembled the *infantile type of testicle four times*, and the senile testicle twice.

Imperfect development of a portion of the genital organs in embryonic life gives an abnormal testicle, which *does not descend but is retained in the abdomen.* With such a testicle the inguinal canal on the same side is usually closed tight, *the scrotum atrophied, and the* vas and seminal vesicle insignificant. This form of undescended testicle cannot be improved by surgery and seldom requires any treatment. The glandular epithelium, if formed at all, soon degenerates and is absorbed, leaving a fibrous mass to represent the testicle.

On the other hand, there are undescended testicles which have the normal structure of the infantile testicle, but which fail to develop into the adult type when allowed to remain in the abnormal position.

Finally, there are undescended testicles in which spermatogenesis and the other changes characteristic of the adult form develop at puberty, but in which senile changes resulting in atrophy occur very early, unless the testicle is brought into its normal position.

In the two varieties last named the testicle is almost always associated with a congenital inguinal hernia and has a normally developed vas and seminal vesicle. They are usually situated in the groin, or in the abdomen close to the internal abdominal ring. The spermatic vessels and the vas with its blood-supply may be contained in a mesentery-like fold of the peritoneum, a persistence of the fetal mesorchium; but there is no regular relation of position of testicle with histologic structure or development, and the abdominal or inguinal *gland may be fibrous and entirely undeveloped.*

These three varieties are examples of the views of *Hunter, of Curling and of Monod and Arthaud, respectively,* on the cause of the imperfect function of the undescended testicle.

Whether or not a gland of the infantile type will develop all of the adult characteristics after transplantation into the scrotum is not certain. The transplantation undoubtedly is a factor in the production of those changes which are associated with the development of secondary sexual characteristics.

It is difficult to arrive at a conclusion regarding the subsequent development of the spermatogenic function in these infantile glands. Experimentally, with dogs, Griffiths[6] has proved the converse to be true, namely, that when the fully descended testicle is replaced in the abdomen the gland becomes soft and small and never shows active spermatogenesis. Schmidt[7] shows that when the immature testicle is transplanted into the abdomen, it develops to the extent of forming spermatocytes, but then gradually degenerates. In man it is probable that spermatogenesis when developed persists for only a short time, and that the testicle rapidly passes into the senile form.

It is generally agreed that the testicular changes incident to puberty are delayed or prevented by the faulty position of the undescended testicle. It is, therefore, *important to transplant such testicles into the scrotum* before puberty. Spontaneous descent may occur in *young children, but is rare after ten years. It is at this* age, therefore, that operation becomes necessary, and for double non-descent imperatively so, because unless transplanted, both glands are very likely to remain infantile or become functionless.

For single non-descent I think that the operation is almost equally important. Disease or injury of the other testicle may occur at any time and so render it useless, or even require its removal.

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[3] These patients came under my care in St. Agnes' and the Mercy hospitals, Baltimore, between the years 1906 and 1913. During this time there were also admitted to St. Agnes' Hospital four patients with undescended testicles, in whom the organ was not transplanted into the scrotum. In three cases the testicles were excised. All of these were unilateral retentions, occurring in young adults, and were complicated by hernia. One of these excised glands contained several tubules showing active spermatogenesis. The others were atrophic. The fourth patient was a child of 10 with a left-sided retention. There was *no hernia and at operation* a most diligent search failed to reveal the presence of a testicle or vas deferens on the affected side. The cremaster muscle was well developed, but the internal ring was entirely closed. We have had no case of malignant tumor in an undescended testicle.

[4] Uffreduzzi: Arch. f. klin. Chir., 1913, c, 1151 and ci, 150.

[5] Odiorne and Simmons: Ann. Surg., December, 1904.

[6] Griffiths: Jour. Anat. and Phys., 1893, xxvii.

[7] Schmidt: Beitr. z. klin. Chir., 1912, lxxxii, 36.

After puberty the undescended testicle is unlikely to develop adult characteristics. In most cases even after transplantation into the scrotum it does not develop further, and often atrophies. There are cases, however, in which the opposite result occurs. This is proved by the occurrence of active and potent spermatozoa in the semen of persons in whom both testicles have been transplanted after puberty. In one of my cases the patient was 30 years of age at the time of operation. Both testicles were in the abdomen and were complicated by hernias. Both were brought into the scrotum, after division of the spermatic vessels. Eighteen months after the operation the patient became the father of a child. Whether this case is one of those in which the undescended testicle had taken on the changes of puberty and possessed spermatogenic function at the time of operation, or whether the testicle has developed in its present position, cannot be decided. This much at least is proved: the operation did not destroy the vitality of the testicles, and a recent report from the patient states that their form has been preserved.

In operating for the relief of undescended testicle we find that the obstacles to our placing the gland in the scrotum consist of adhesions between the structures of the cord and the vaginal process of peritoneum, with more or less tortuosity and adherence of the spermatic vessels. These barriers must be removed, if the gland is to be properly placed in the scrotum.

Unless the structural shortening of the cord is overcome by division of these contracted tissues, no fixation will retain the testicle in the scrotum. The Bevan[8] operation furnishes a method by means of which we are able to accomplish this end. The ultimate success of the Bevan operation depends on the great factor of safety provided in the blood-supply of the testicle. Either the spermatic or the deferential artery alone seems able to supply sufficient nourishment for the vitality of the testicle. Therefore, in cases in which short spermatic vessels make a persistent barrier to the transplantation of the testicle into the scrotum, these vessels may be divided without necessarily destroying the function of the organ.

Following is a description of the operation done in the present series:

> After the usual skin disinfection, the inguinal canal is opened as in the hernia operation. The testicle, if situated in the groin, is lifted up and by gentle traction the cord is put on the stretch. The peritoneal covering is incised around the cord as high up as is possible and the spermatic vessels separated by blunt dissection from their peritoneal covering inside the abdomen. The vessels are now straightened out by dividing all adhesions.
>
> In many cases this loosening gives sufficient mobility to the cord to bring the testicle into the scrotum. Should this prove true the tunica vaginalis is turned back over the testicle and the gland is placed in the scrotum. Usually it is necessary to make a pocket for its reception, by pushing the finger or a clamp into the scrotum.
>
> When the testicle is retained inside the abdomen, the peritoneal cavity is opened through the hernial sac, which is usually present, or the wall is incised in the region of the internal ring. The testicle may be found in the abdomen, with the structures of the cord in the canal; or all the vessels and the vas may be retained in the abdomen. In the former event the testicle is drawn out and an attempt is made to lengthen the cord by division of adhesions, etc., as just described. With the latter condition it is usual to find a mesorchium, the vessels showing plainly through the peritoneal covering. This mesentery-like structure fixes the testicle to the abdominal wall and must be divided in order to gain sufficient mobility for the transplantation. The testicle with its mesentery is brought out through the wound and the vas with its vessels separated from the spermatic group. The two sets of vessels are easily distinguished coming from different directions inside the peritoneal fold.
>
> The spermatic vessels are doubly ligatured and divided. The peritoneum is split so as to bring the vas and its vessels with the testicle into the inguinal canal and the scrotum. Enough peritoneum is retained to form a coat for the testicle.
>
> The division of the spermatic vessels removes the greatest factor in the shortening of the cord and should be done whenever the separation of adhesions, etc., do not give sufficient length to permit the testicle to rest easy in the scrotum. A slight gain may be obtained by shortening the distance from the abdomen to the scrotum. This is accomplished by dividing the floor of the canal down to the deep epigastric vessels. This was done in one case and thereby the spermatic vessels were preserved. I have never been required to ligate the epigastrics and carry the opening of the floor beyond them, as recommended by Davisson,[9] although this maneuver should be considered before resorting to excision of the testicle.
>
> In closing the canal a stitch is taken through the pillars of the external ring and the cord, fixing the latter structure. In other respects the closure is the usual one made for inguinal hernia without transplantation of the cord.

In my experience the immediate result has been good in all cases and the ultimate result, for periods ranging from three months to seven years, in all cases has been satisfactory. There has been no gangrene of the testicle even in the cases in which the spermatic vessels were divided. All the hernias are cured. No testicle has retracted out of the scrotum, and there has been no gross atrophy of the transplanted organ.

All sixteen cases were associated with hernia. One hernia was strangulated. The spermatic vessels were divided four times. There were four bilateral cases, three left-sided and nine right-sided single retentions. Of this number ten patients have been examined or heard from during the past two months. The bilateral cases have been watched very carefully and three of the four have reported. One of them is the adult mentioned above. The two boys were 12 years old at the time of operation. Both were quite undeveloped and showed absence of pubic hair and other secondary sexual characteristics. Both have since developed these characteristics. In one the change occurred very promptly and was marked four months after the operation. The other boy required nearly a year for the change to be noticeable. These boys were operated on fifteen and twenty-four months ago, respectively. In the earlier operation the spermatic vessels on one side were divided.

In the remaining seven cases the patients were operated on from three months to seven years ago.

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[8] Bevan, Arthur Dean: The Surgical Treatment of Undescended Testicle, The Journal A.M.A., Sept. 19, 1903, p. 718.

[9] Davisson: Surg. Gynec. and Obst., 1911, xii, 283.

Politics and Health Administration.—Politics has been a curse of health administration in this country. Politics and sanitation do not mix. One of the important things is to divorce the two. Only those should be appointed to the position of health officer whose training adequately prepares them for the work. Such persons should be given compensation commensurate with their great responsibility, and the tenure of office and other conditions should be attractive sc as to induce competent men to enter and build up the profession.—M. J. Rosenau in *Vermont Med. Month.*

ACUTE INTESTINAL OBSTRUCTION DUE TO GALL-STONE

REPORT OF CASE

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Among the causes of intestinal obstruction listed in the text-books, such as bands and adhesions, volvulus, Meckel's diverticulum, etc., obstruction due to gall-stone is also mentioned, although it occurs so rarely that many men of large experience go through a long professional career without having seen a case. Because of its relative infrequency, as well as from the interest which is naturally felt in cases of this character, the great majority of cases in which it is recognized are matters of record. This is especially true when the diagnosis is confirmed, or the condition discovered at the time of operation (for it cannot be denied that most cases have escaped definite diagnosis beforehand). It follows that the literature of this subject is fairly comprehensive.

I shall confine myself therefore to a report of my own case, with a brief discussion of some of the more interesting features, referring those who may care for a more thorough investigation to the numerous articles on this subject.

On April 2,. 1913, I was asked to see Mrs. W., who for four days had been persistently vomiting large quantities of greenish fluid. All attempts to move the bowels during this period had failed, although five days before, as a result of a purgative, there had been five or six free movements. The obstruction therefore was acute.

History.—The following history of the patient prior to the time at which I saw her was given by her physician, Dr. O. B. Ross of Charlotte, N. C. The patient was a white woman. aged 60. Her father died of old age. The mother died of erysipelas at 45. There were four brothers, of whom two were killed in war and one died suddenly, and three sisters, of whom one died from unknown cause. The patient had measles at 12, and no scarlet fever or diphtheria. She had typhoid fever at 22 and was in bed for four weeks from this cause. During the last ten years she had suffered from several attacks of gout. Eight years ago she had an attack of renal colic and passed a calculus; one year later the patient passed another stone, but has had no attack since. She is the mother of eight children, six of whom are alive and in good health. She has never suffered from jaundice or any symptoms referable to gall-bladder.

Present Illness.—This began March 29, 1913. There was slight stomach disturbance and pain in the right side, which the patient thought was another attack of renal colic. About 5 p. m. of the same day she vomited a large amount of greenish material. She had taken a purgative and her bowels had moved six or eight times the day before. She vomited three times during the day. The liver was not enlarged. There was slight tenderness over the twelfth rib anteriorly. There was no tenderness over the gall-bladder region and no fluid in the abdominal cavity. The heart sounds were fair but rather distant while the patient was lying down. Temperature 99.6 F. Pulse 82. Vomitus from 8 to 15 ounces and very green.

Examination.—The urine was of light amber. Specific gravity 1.020. There was a trace of albumin and also of pus; there was no sugar, few casts, uric crystals and no blood.

March 31, 1913. Leukocytes 9,400. The temperature did not go over 99 F. during the day. Large amounts of green fluid were vomited at intervals of from three to five hours. The pain in the abdomen was general, diffuse and nagging. There was an absence of pain in the right side like kidney pain. There was tympany above the umbilicus; below it there was dulness but not flatness. The patient has had an umbilical hernia of large size for thirty years, part of the hernia being irreducible. On one occasion she had sudden pain in the region of the hernia, vomiting and cold sweat, which soon passed off on lying down.

When seen by me, four days after the beginning of the attack, the patient had the usual symptoms of acute intestinal obstruction. Considering the length of time the obstruction had existed, her general condition was fairly good. She was a very large woman, weighing over 200 pounds. Palpation of the abdomen, because of its size, was largely negative. and although there was absence of the ordinary signs of strangulation, it was thought that the cause of the difficulty would be found in connection with the hernia.

Operation was advised as imperative, irrespective of the cause, and the consent of the family being obtained was done on the afternoon of April 2.

Operation and Result.—The usual transverse incision for the radical cure of umbilical hernia was made, and the sac found to contain a large amount of omentum, adherent but not strangulated, but no intestine. The cause of the obstruction evidently did not lie there. On passing the hand into the right flank a hard mass was felt the size of an egg, and on delivery of a dark-colored, swollen and distended loop of intestines the lumen was found effectually plugged by a foreign body, which with the discovery of a smaller body in front, and the presence of a facet on both, was sufficient proof of a gall-stone. The small stone acted as a pilot for the larger one, the latter having a rough and corrugated surface, which no doubt materially increased the difficulty of its further progress through the bowel.

The intestine at the point of obstruction seemed badly affected though still viable, and an effort, which was partly successful, was made to slide the stone into a more favorable locality before the bowel was opened. During this maneuver the small stone slipped down and was not again found, until it passed by rectum on the third day.

The intestine was incised opposite its mesenteric border, and the large stone delivered, the bowel being closed in the usual manner. A considerable portion of the omentum, adherent to the hernial sac, was amputated; as a result the remaining part was too short to interpose between the damaged intestine and the abdominal wall. A superficial examination of the gall-bladder region, which was all that could be made without an enlargement of the wound, showed extensive adhesions, but no special attempt was made to demonstrate the point of anastomosis between the gall-bladder and the intestine.

In the desire to cure the hernia the fascia was overlapped transversely and the wound closed without drainage, the absence of a drain being no doubt a technical error, considering the extreme probability of wound contamination.

The patient was immediately relieved of the vomiting and other obstructive symptoms, and the progress of the case was most favorable until the fifth day, when a slight rise in temperature developed, and on the sixth day on examination of the wound the right half of the incision was found to be infected, the left half healing primarily. In a few days, from the character of the discharge and the escape of gas, it became evident that there was also a fecal fistula. The sutured portion of the ileum, having no omental covering, had no doubt adhered to the under surface of the abdominal incision. There was profuse discharge for about ten days, after which the wound began to heal quite rapidly, until at present, May 28, there is a very small fistulous tract with almost no discharge. The patient is up and about, but so far there is no indication of a return of the hernia.

The large stone in this case was 6 inches in its greatest circumference, and 4½ in the lesser; the length was 2½ inches. The largest stone reported by Barnard[1] was 3¾ inches in circumference.

The relative infrequency of gall-stone obstruction is seen in the oft-quoted statistics of Leeds Infirmary and the St. George Hospital. The former showed only one case in ten years, and the latter only one in fifteen years. Martin[2] says that the records of Johns Hopkins Hospital, together with those of the Union Protestant Infirmary in Baltimore, out of 280 cases of obstruction, show only one due to gall-stone. He also states that he was able to collect but four cases from the six leading surgeons of that city, and that two of the men with the largest and most active careers had never seen a case.

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[1] Barnard: Ann. Surg., August, 1902.

Access to the intestinal canal practically always presupposes the passage of the stone through a fistulous tract between the gall-bladder and the intestine. The point of communication is most commonly the duodenum, and occasionally the colon, but some very strange cases have been reported in which the stone escaped into the urinary bladder, or into the stomach, being later vomited. For obvious reasons the stone can very seldom produce obstruction when it enters the colon, but in the small intestine, because of the gradual narrowing of the lumen, "funnel-shaped" it has been called, the stone is usually arrested within a few feet of the ileo-cecal valve, sometimes in the valve itself.

Few cases of gall-stone ileus have been diagnosed prior to opening the abdomen. Barnard was able to make an accurate diagnosis in one of his three cases, but Møller[3] of Copenhagen, in analyzing twenty-two cases of gall-stone ileus in which he operated, commenting on diagnosis, says that "there had been no previous symptoms of cholelithiasis in quite a number of cases," while typical colics had occurred in only six of the twenty-two. Other observers have made similar statements, so that we can obtain but little aid from this source.

Møller further noted that "even when the abdomen is opened, the diagnosis is difficult; in a number of instances the conditions first found were assumed to be sufficient to explain the ileus and no further search for a gall-stone was made, and thus it escaped detection. In only three cases was the ileus traced to its true cause before the operation. Only four of the twenty-two patients survived; the mortality was thus 82 per cent." In all of his cases, however, the obstruction had existed for two weeks or more before the operation.

The peculiarly fatal nature of this form of ileus is shown in the experience of all other writers on the subject, the mortality following operation, in the opinion of one operator, who lost twelve out of thirteen cases, being prohibitory. Even in the recent statistics collected by Martin, the death-rate is given as 69 per cent., the reasons for which he thinks are due to the advanced age of the patients, the fact that operation is often undertaken as a last resort, and the long-standing toxemia resulting from obstruction.

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[2] Martin: Ann. Surg., May, 1912.

[3] Møller, P.: Gall-Stone Ileus, Hospitalstid., March 26, lvi, No. 13; abstr., THE JOURNAL A.M.A., May 17, 1913, p. 1589.

Resuscitation.—An interesting and useful number of the medical series of publications of the University of Missouri is that on resuscitation, by D. H. Dolley. The author discusses at some length the scientific basis of resuscitation, the specialized work of the organs of the body, the viability of the brain and nervous system, which is the weakest point in respect to viability after asphyxiation, the viability of the other organs, clinical death and true death and instances of resuscitation after prolonged periods of apparent death. Methods of resuscitation and their relative efficiency are given consideration, and the treatment of accidental asphyxiation produced by different agents is set forth. It is suggested that too much reliance should not be placed on the popular "pulmotor" and similar contrivances.

SEVERE ERYTHEMA MULTIFORME WITH ANAPHYLAXIS DUE TO OYSTER PROTEIN

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Erythema multiforme with visceral manifestations of varying degrees of severity is recognized by the majority of clinicians. The descriptions of Osler[1] still stand as classics; but little has been added to them.

The etiology of the condition has never been settled, except that the majority of observers are agreed that there is a toxemia of some kind, whatever that may mean. *Köbner[2] thought that it was angioneurosis due to vasomotor disturbances;* Lewin[3] that reflex causes, especially those of urethral origin, might be responsible. Galloway[4] considered that auto-intoxication was to blame, and Finger[5] thought that the local effects of bacteria on the tissues might be the cause. Certain other observers[6] have shown its association with typhoid fever, or with other infections. Corlett[7] has definitely established that some cases may be due to streptococcus infections.

In a recent case, under my care, the patient apparently suffered because of a definite anaphylaxis against oyster protein, and because of this fact the case is worthy of being put on record.

E. F., white woman, aged 50, trained nurse, was referred to me, Jan. 3, 1913, by Dr. Jackson of Washington, because of a very severe attack of hives.

The history showed that about the middle of December she had eaten a few raw oysters, and that a few hours later had had a rather violent attack of urticaria that lasted about seventy-two hours. Accompanying this attack there had been some fever and fairly definite abdominal pain.

On the night of December 31 she had eaten about half a dozen fried oysters, and four hours later was seized with abdominal pain and very severe urticaria, which was not relieved by cathartics and simple lotions.

When seen by me, January 3, her entire body was covered by an eruption that was a combination of the macular type of erythema multiforme and of urticaria. None of the lesions were more than 2 cm. in diameter, and many were distinct wheals, but the macular lesions persisted for several weeks, and were not at all wheal-like. The itching was very intense, and the skin was covered by scratch marks. The temperature by mouth was 101, and the pulse 104. The right knee and the left elbow were swollen and painful, and the movement in them was markedly restricted. The abdomen was slightly tender, especially over the left upper quadrant. The urine had a specific gravity of 1.010, and contained no albumin or sugar, no casts, red or white blood-cells, and no excess of indican. The hemoglobin was 90 per cent., and the white cells numbered 16,500. A differential count of 500 leukocytes stained by the Jenner method showed the polymorphonuclears 45 per cent., eosinophils 17.8 per cent., large mononuclears 1 per cent., small mononuclears 32 per cent., transitionals 4.2 per cent. and mast-cells 0.8 per cent.

January 8 it was noted that the cutaneous condition was *no* better, in spite of the usual treatments, and that the temperature was 104.5 by mouth. Abdominal pain had been so severe as to simulate gall-stone colic, but the tenderness was on the other side of the abdomen, and there was no jaundice. The tongue was heavily coated but otherwise the mucous membranes were clear. Both knees and both elbows were now involved. There had been slight bleeding from the nose, and a touch of bronchitis of the large tubes. The leukocytes numbered 12,000, but the eosinophils were 20 per cent. Hexamethylenamin was tried in large doses.

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[1] Osler: Am. Jour. Med. Sc., 1895, cx, 629; ibid., 1904, cxxvii, 1; Brit. Jour. Dermat., 1900, xii, 227.

[2] Köbner: Klinische und experimentale Mittheilungen, etc., 1864.

[3] Lewin: Berl. klin. Wchnschr., 1876, xiii, 321.

[4] Galloway: Brit. Jour. Dermat., 1903, xv, 235.

[5] Finger: Arch. f. Dermat. u. Syph., 1893, xxv, 765.

[6] Parker and Hazen: Bull. Johns Hopkins Hosp., 1911, xxii, 79.

[7] Corlett: Jour. Cutan. Dis., 1908, xxvi, 7.

January 10 the temperature was 101, and the joint and abdominal symptoms were better, but the rash had not changed and still itched as intensely as ever.

January 20 the abdominal pain was gone and there was only an occasional attack. The temperature was normal, and the patient looked much better, but the cutaneous manifestations were practically no better. The patient was given 50 million dead colon bacilli and 200 million dead *Staphylococci albi.*

On the 30th it was noted that the patient became better after the injection of vaccine, but that for the last two days she had been worse again so far as the cutaneous eruption was concerned. She was given 75 million colon bacilli.

February 5 she was very much better, and was given 100 million colon bacteria. The patient's convalescence was uninterrupted.

On account of the definite history of the eruption following the eating of oysters, especially when the previous indulgence in the same article of diet had excited an outbreak, it was determined to prepare a vaccine from an oyster, and inject some of it just beneath the skin, as is done in the luetin test, to see if there would be a local skin reaction, such as has been obtained in cases of fagopyrism, or buckwheat poisoning.[8] Accordingly Dr. VanSwearingen, pathologist to Freedmen's Hospital, prepared me a fine emulsion from an oyster, heated it at 60 C. for one hour, and placed it in a sterile bottle. An injection of 5 minims was made just beneath the skin on February 15. No local reaction followed, but within three hours the temperature had risen to 102, the pulse-rate to 115, and there was a violent attack of urticaria, that lasted two days. Accompanying this there was general malaise, some nausea, and slight abdominal pain. In two days, however, these symptoms disappeared, and up to the present time she has remained well.

The attack of urticaria, with visceral manifestations, excited by the injection of the oyster vaccine, although other hypodermics had not caused an exacerbation of the symptoms, would seem to show that the oyster proteins had caused a condition of hypersusceptibility, and that the attack of December 30 as well as the attack experimentally excited on February 15 were anaphylactic phenomena.

The Rochambeau.

VOMITING OF PREGNANCY TREATED BY INJECTION OF BLOOD OF NORMAL PREGNANT WOMEN

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The following case is reported because of the outcome of the treatment used and in the hope that others may be induced to employ the same method in suitable cases:

History.—The patient, aged 36, first seen during the sixth month of pregnancy, had previously undergone three labors. Eight years before I saw her the first child was delivered with forceps. This was followed by puerperal infection with pyemia, and ultimately by return to fairly good health. A second pregnancy was interrupted because of placenta praevia; the third was normal in all respects and resulted in the normal birth of a full-term child, now four years of age. In none of these pregnancies were there evidences of intoxication or renal disturbance. A moderate amount of nausea, almost unaccompanied by vomiting, occurred each time during the early months.

Fourth Pregnancy.—For three months the course had been regular. Then general malaise began, accompanied with irregular fever of from one to three degrees. With the onset of fetal movements, tenderness, dragging and aching pain in the right lower quadrant became a constant feature. Nausea developed and was followed by vomiting which became intractable. Repeated physical examinations and analyses of urine were negative. Various therapeutic measures proved unavailing. At the time of examination no physical abnormalities were evident. The patient was not neurotic despite incessant vomiting for a period of five weeks, with associated loss in weight and strength. She believed that all food was vomited, but fasting for twenty-four hours caused a marked accentuation of weakness, which indicated that some nourishment had been retained.

Treatment.—By means of a petrolatum-coated syringe, 15 c.c. of blood were withdrawn from a pregnant woman in whom the Wassermann reaction was negative, and were at once injected into the muscular tissues of the patient's back. Despite the fact that she felt no confidence whatever in the treatment, the symptoms improved within eighteen hours. Emesis continued, but a large proportion of food was retained. Five days later, from another pregnant woman in whom the Wassermann reaction proved negative, a considerable amount of blood was withdrawn, immediately defibrinated and 10 c.c. were injected into the patient, with the result that complete cessation of vomiting occurred within eighteen hours. Two subsequent injections of defibrinated blood were made within the next two days, after which all treatment was discontinued.

Pregnancy continued undisturbed and was followed by normal labor at term with birth of a healthy child.

909 Monroe Building.

Strangulated Hernia with Gangrene.—Fred D., aged 22, was attacked at 6 p. m., Nov. 22, 1913, with a sudden pain in the right testicle. The pain was not severe enough to prevent sleeping, but on arising in the morning the patient found the testicle swollen and painful. He felt so sick that he was advised to hurry to his home, 50 miles away, the physician telling him it was an orchitis and "would need lancing." There was no history of specific infection, traumatism or grip, but the patient declared that the swelling began in the testicle. On reaching home, he called his physician, Dr. McDaniel, who made a diagnosis of orchitis (second day), but later on the doctor was not satisfied with the diagnosis owing to the violence of the patient's symptoms. The third day the patient began to vomit frequently; the abdomen was greatly distended, but not very tender, pulse 98 and temperature 99.8; he was restless and had a very anxious facial expression. The scrotum was as large as a cocoanut; the skin was bluish black and the prepuce the same. Both began sloughing the morning of the fourth day. I saw the patient at 11 p. m., end of fourth day, and found all the above-described conditions present but more pronounced. The scrotum was black and sloughing; also the skin of the right side of the penis and the prepuce were in the same condition. There was a foul odor from the blackish exudate. We suspected strangulated hernia, but never having seen such a condition of the scrotum and penis in any strangulated hernia, I was not sure what we had to deal with. The operation revealed a large loop of small bowel in the scrotum, which was black and gangrenous and of a very offensive odor. I made a resection of 9 inches of the small bowel, using a medium-sized Murphy button, and did the best Bassini operation I could under the circumstances. The anesthetist, Dr. Bowden, reported the patient dying on the table, but nevertheless the operation was completed. Just as I finished, the patient "flinched" and I found that he was not so dead as we had thought. He finally rallied, and has made a good recovery. He passed the button the eleventh day.—L. P. Allison, M.D., Brownwood, Tex.

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[8] Smith, Harry Lee: Bull. Johns Hopkins Hosp., 1909, xx, 153; Buckwheat-Poisoning, Arch. Int. Med., May, 1909, p. 350.

A CASE OF TRAUMATIC RUPTURE OF THE HEART

B. J. O'Neill, M.D., San Diego, Cal.

History.—The patient, F. R., schoolboy, aged 9, while playing at school was set on by some older boys, who knocked him down and jumped on him. He walked home, complaining of pain in the left groin, remained in bed two days, and then was up and about for four more days, still complaining of pain in the region of the left groin and hip. On the seventh day he was brought to San Diego, a distance of 30 miles, by train, and walked two blocks to my office, still complaining of the same symptoms. At no time did he complain of pain anywhere else.

Examination.—This revealed a well-developed boy walking with a decided limp and evidently suffering considerable pain. A slight swelling and redness over the left saphenous opening was discovered. There was also considerable limitation of the abduction and rotation of left thigh. Abdomen and inguinal rings were negative. No examination of the chest was made. Patient was sent at once to a hospital where a roentgenogram of the hip and pelvis was made, nothing abnormal being shown. A diagnosis of a hematoma was made and patient put to bed for rest and treatment.

Treatment and Course.—Hot fomentations were applied to the hematoma in the groin. Temperature at this time was 98.6, pulse 102 and regular, respirations 25. Patient rested quite comfortably until about twelve hours after entrance to the hospital, when, at 6 a. m., he suddenly went into a state of collapse; pulse and respirations became very rapid, and he died in one hour.

Necropsy.—This was made three hours later by Dr. H. A. Thompson. When the chest was opened the pericardium was found bulging forward, very tense and full. It was found to contain about 500 c.c. of fresh blood and about 200 gm. of dark clotted blood, evidently of some days' standing. A perforating slit was found, measuring about 3 mm. in length, just at the auriculoventricular junction of the left heart, immediately above the middle of the anterior leaf of the mitral valve. Myocardium and valves were normal. Lungs, abdominal viscera, peritoneum, etc., were negative.

It is apparent that this boy suffered a traumatic rupture of the heart at the time he was jumped on, with some hemorrhage into the pericardium, followed by a sealing of the perforation with a clot. Some movement of the patient caused this clot to break loose, and death resulted from hemorrhage into the pericardial sac. It is remarkable that he had been up and around for four days with the clot holding.

The case is of interest not only from its rarity, but also as an illustration of the value of a complete physical examination in every case. Had such an examination been made here, at least an approximate diagnosis of the real trouble might have been made.

Fuchsin Ointment in Tinea Sycosis.—Two articles that appear in The Journal, "The Germicidal Action of Basic Fuchsin" by E. S. May, April 20, 1912, p. 1174, and "Basic Fuchsin in Chronic Leg Ulcer" by E. S. May and M. L. Heidingsfeld, May 31, 1913, p. 1680, suggested the use of that remedy in a very obstinate case of tinea sycosis of long standing. The patient, an Egyptian fellah (peasant), said that he had contracted the disease fourteen years before and had been treated by innumerable physicians and quacks without benefit. He certainly bore the marks of the ravages of the disease, which lent credence to the truth of his statement in regard to its duration. He had a scar over the lower right cheek extending down onto the neck and up back of the ear and well into the hair. There was cicatricial contraction enough to draw the head markedly to the right side. Most of the usual remedies, as sulphur, benzoin, copper, ammoniated mercury, beta-naphthol and iodin, were given faithful trial with only slight improvement. When a 1 per cent. fuchsin ointment with an adeps lanae base was applied improvement was at once apparent and continuous until a cure was effected.—H. B. Hanson, M.D., El Feshn, Egypt.

New and Nonofficial Remedies

The following additional article has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Its acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

AMPHOTROPIN.—Amphotropin is hexamethylene-tetramine camphorate $((CH_2)_6N_4)_2C_8H_{14}(COOH)_2$, a molecular combination of camphoric acid and hexamethylene-tetramine.

Actions and Uses.—Amphotropin combines the actions of camphoric acid and hexamethylenamin, but it is claimed that it is free from the subjective gastric disturbances produced by full doses of camphoric acid, and that it is effective in smaller doses (presumably by neutralization and increased solubility of the acid). It acts as a urinary antiseptic, and is said to promote the regeneration of sloughing epithelium. It increases diuresis and the elimination of uric acid in pathologic conditions.

Amphotropin should be useful in bacteriuria, in chronic and subacute cystitis and pyelonephritis, in nephritis and less pronounced forms of uric acid diathesis; and as a prophylactic against infections in the urinary tract, especially in connection with surgical treatment. It is contra-indicated in acute cystitis as well as in the initial stages of tuberculosis of the urinary organs.

Dosage.—0.5 Gm. (7½ grains) three times daily. If necessary the dose may be increased to 1 Gm. (15 grains) three times daily.

Manufactured by Farbwerke vorm. Meister Lucius and Bruening, Hoechst a.M., Germany (Farbwerke-Hoechst Co., New York). U. S. patent No. 1,064,227 (June 10, 1913; expires 1930). No U. S. trademark.

Amphotropin Tablets.—Each tablet contains amphotropin 0.5 Gm. (7½ grains).

Amphotropin is prepared by interaction of a solution of hexamethylene-tetramine and of camphoric acid in a suitable organic solvent and isolation of the resulting product.

Amphotropin is a light, white crystalline powder, soluble in water, alcohol and chloroform, but almost insoluble in ether and benzene. The aqueous solution possesses an acid reaction.

If 10 Cc. of a saturated aqueous solution of amphotropin be treated with 3 Cc. of dilute sulphuric acid a white precipitate will be formed, which after washing and drying should melt at 186°.

If the filtrate from the above precipitate be heated the odor of formaldehyde will be apparent. If the same solution be made alkaline with sodium hydroxide and heated, ammonia will be evolved.

An aqueous solution (1 : 20), which should be clear, should not be changed by saturation with hydrogen sulphide or the addition of barium chloride solution.

If an aqueous solution of amphotropin be treated with dilute nitric acid it should become not more than opalescent.

If an aqueous solution be mixed with an equal volume of sulphuric acid, and then a solution of ferrous sulphate be superimposed, no coloration should appear at the zone of contact of the two solutions.

If amphotropin be ignited, no residue should remain.

If from 0.2 to 0.3 Gm. of amphotropin be weighed into a flask, and dissolved in from 30 to 40 Cc. of a mixture of equal parts of water and alcohol, the titration of this solution with normal alkali, using phenolphthalein as indicator, should indicate the presence of an equivalent of from 41.5 to 42 per cent. camphoric acid (1 Cc. normal alkali is equivalent to 0.09931 Gm. camphoric acid).

New Books.—Herodotus relates that Xerxes wept at the sight of his army, which stretched farther than the eye could reach, in the thought that of all these, after a hundred years, not one would be alive. And in looking over a huge catalogue of new books, one might weep at thinking that, when ten years have passed, not one of them will be heard of.—Schopenhauer.

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SATURDAY, FEBRUARY 28, 1914

THE MODIFICATION OF FATS DURING ABSORPTION

It has long been believed that the problem of the absorption and distribution of fats in the body is one of relative simplicity in comparison with the question of the metamorphosis and fate of the other foodstuffs that enter into the diet of mankind. Briefly stated, the formula of the behavior of fats reads as follows: The processes of fat digestion result in the production of fatty acids and glycerol, soaps also being formed if the conditions under which alkali is contributed in the intestine are favorable. These various products somehow pass through the alimentary wall, where neutral fat is found again in the form of very fine globules suspended in the beginnings of the lymphatics. Unlike the products of protein or carbohydrate digestion, which are carried to the liver in the portal blood, the fat fragments are resynthesized into true fat at the very seat of their absorption, and are transported by way of the thoracic duct directly into the blood-stream, leaving the latter again in a manner that has not yet been precisely determined.

Substances such as mineral oil and petrolatum, which are physically almost identical with fats, are not absorbed even when introduced in the form of the finest emulsion. The intestine rejects the paraffin and takes up the fat. It likewise in the main excludes the undesirable wool-fat. How this physiologic discrimination between a true nutrient (fat) and an undesirable hydrocarbon (petrolatum) occurs is best explained by the fact that fats cannot be absorbed as such, but must first be converted, like other foodstuffs, into derivatives which can be absorbed in a state of solution.

Fats differ from proteins and carbohydrates in that the products of their digestive cleavage are promptly rebuilt before they leave the intestinal wall and enter the circulation. Whether all of the fat that is thus absorbed finds its way to the blood-stream or whether some small fraction is utilized or broken down in the tissues of the intestinal wall cannot be answered definitely. It is commonly assumed, however, that the large fraction which actually appears in the lacteals is for the most part identical with the fat of the ingesta. This would explain the fact that when unusual fats are taken as food they may sometimes be detected subsequently stored in the depots of the tissues. We have rarely stopped to ask how it happens that the tissue-fats maintain the rather characteristic similarity of composition, despite undoubted variations in the texture and make-up of the food-fat. Dr. Bloor[1] of the Washington University Medical School in St. Louis has presented evidence of various changes in fats during absorption which make it seem probable that the intestine is able to modify their composition radically. The tendency of the changes observed is toward the production of a fat more nearly like the typical body-fat of the animal than the fat ingested. The modifications actually appear to be purposive, which was brought out by offering to the subjects fats widely different from the usual chyle-fat in hardness and in the nature of their fatty acids. For example, the melting-point of high-melting-point fats *was lowered by the addition, proportional to its melting-point*, of an unsaturated fatty acid, probably the softer oleic acid. Again, an elevation of the melting-point and other chemical changes of a low-melting-point fat, like the liquid olive-oil, were brought about by the addition of the harder saturated fatty acids.

These facts, showing the general tendency toward the production of a uniform chyle-fat, presumably the characteristic body-fat of the animal, place the purpose of the peculiar mechanism of fat absorption in a new light. Apparently, it serves to permit adaptive changes, and reveals one more of the physiologic devices by which the composition of the organism tends to approach a uniform type.

DEVELOPMENT OF SEASIDE RESORTS

For many years the nations of continental Europe have given consideration to the development of seaside resorts to which the peculiar geographic and climatic features of their respective countries have lent occasion. Americans rarely stop to realize the extent to which the possibilities of these numerous localities along an extended and varied coast-line have been recognized and developed abroad with a combination of business tact and hygienic insight. In this country the exploitation of the seashore has been left largely to chance; at any rate it has rarely received any helpful stimulus or cooperation from the government, and still less consideration in the way of desirable supervision. In this respect we are citing only one of many activities the participation in which is left in the United States to private initiative, whereas in European countries it is likely to be fostered or enforced by the intermediation of the state.

Data collected by the Prussian statistical bureau furnish interesting figures in regard to the increasing popularity of the seaside resorts of this great German province and of the entire German empire. The number of these acknowledged resorts has grown in Prussia from 31 in 1880 to 156 at the present time; in Germany as a whole, with its comparatively small coast-line, there are to-day no less than 184 localities in which the possibilities of the seaside are publicly developed in some degree. It is estimated that the total number of persons who annually visit the seaside resorts of Germany for recuperation or the restoration of health exceeds half a million.

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[1] Bloor, W. R.: Fat Absorption: III, Changes in Fat During Absorption, Jour. Biol. Chem., 1914, xvi, 517.

The advantages to be derived from a temporary residence in the vicinity of the seashore are receiving growing appreciation everywhere. The mere change of scene and surroundings has long been recognized as a potent factor in keeping up the vigor, and this is particularly true of persons in whom temperamental peculiarities are likely to bring about a depression incident to monotony of life and climate. The seashore has long attracted those who enjoy a delightful summer climate and seek rest and recreation as an adjunct of good health rather than more distinctively curative effects. To-day, however, the therapeutic possibilities of seaside resorts are being developed and exploited to a degree that could not have been anticipated a generation ago. Whereas we, in the United States, have hitherto given little thought to this feature of the seaside program, in Germany it has become a matter for scientific study and official concern. Attention has been centered on the favorable action of the dust-free air of the strand, with its moisture, salinity and freedom from atmospheric movements. The utility of the bathing in relation to a great variety of pathologic conditions has been pointed out; the special indications for the enjoyment of the unique insolation have been noted. To all of these natural advantages, of which the physical virtues are unquestionably overemphasized in print and the psychic effects underestimated, there have been added a variety of additional agencies that can be applied in the interest of health. Thus the largely visited seashore communities have witnessed the construction of buildings where warm sea-baths, mud-baths, etc., can be offered. In many of the localities in Germany special hospitals, sanatoriums and convalescent homes have been erected in the neighborhood of the shore, so that routine medical treatment can be combined, in every detail of refinement, with the supposed curative virtues of the seashore climate. Further than this, the period of possible residence has been prolonged in many of these places so that it now extends over more than the summer season; and the same shore has thus become a winter- as well as a summer-resort.

Any institution or locality which attracts persons, both sick and healthy, from far and wide, ought to be subjected to rigorous hygienic inspection by competent authorities. This is desirable, both in the interests of public health and in justice to all the parties concerned. In this respect our German competitors have quite outdistanced us. For nearly a century the bath-resorts of Prussia have been subject in some degree to the inspection or supervision of the officials entrusted with the problems of the public health.[1] Americans might differ as to the wisdom of relegating so large a measure of authority to the central government in respect to community life and business conduct; but the effect has been a wholesome one abroad in the way of encouraging growth, particularly by enforcing such restrictive measures and advising such constructive projects as most progressive balneologists would agree on. The decrees of the German authorities have included considerations of every aspect of sanitation, of provision for unexpected emergencies and epidemics, of arrangements for the comfort of visitors and patients, with the obvious intent of attracting attention. No essential detail is too insignificant to receive emphasis. In one report is emphasized the necessity of providing clean ice, skilled nurses, a suitable supply of drugs, receptacles for sputum, etc. The government has further permitted the assessment of a *Kurtaxe* on guests in furtherance of the projects which require public assistance rather than private capital.

The good that is accomplished in the way of promoting health, enjoyment and recovery from disease by the modern development of the seaside as a climatic and institutional agency is undoubted. One wonders whether there is not a far greater opportunity for the development of some of our own natural coast resources for the public welfare than has been assumed heretofore. The aim should always be to reach every group of our population, so that the less favorably situated as well as the more opulent might reap at low cost the advantages which a favorable climatic location has vouchsafed. Even if the seashore hobby were worshipped like a fetish, it could do little else than good; for whatever encourages the outdoor life of our people amid a hygienic environment is likely to be wholesome.

NEW POINTS OF VIEW REGARDING TRICHINOSIS

Trichinosis is a pathologic condition regarding the ultimate etiology of which the facts are clearly made out. The sources of infection with trichinae are well recognized and the wanderings and biologic behavior of the parasites in the body of their host are adequately ascertained. The hygienic aspect of the invasion of man by this species of parasitic roundworm is now fully appreciated, although there has been much debate in regard to the most satisfactory and economic way of preventing the disease.

The prevailing view in regard to the immediate cause of the pathologic symptoms manifested both by human patients suffering from trichinosis and by the numerous animals which are subject to this infection takes into account chiefly or solely the mechanical disturbances set up by the parasites. It is currently believed that the localized encysted larvae and the wanderings of the embryonic forms of the muscular worms in various parts of the body suffice to account for the symptoms which attend the disease. Thus there may be intestinal upsets while the organisms are still in the alimentary tract; muscular pains after the muscles have become invaded by the parasites; functional disturbances referable to the localized damage done in these various ways, and, finally, reactions which are clearly reflex in character and supposedly occasioned by the irritation provoked by the presence of the parasites in the sensitive tissues.[1]

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[1] This statement is based on an authoritative review of the German seaside resorts, edited by Geheimer Ober-Medizinalrat Dr. R. Abel of Berlin; see Abel, R.: Die gesundheitlich wichtigen Verhältnisse und Einrichtungen der deutschen Seebadeorte (mit Ausnahme der mecklenburgischen Seebäder), Vrtljschr. f. gerichtl. Med., 1913, xlvi, Supplement-Heft, Einleitung, p. xi.

Thanks to the careful investigations of Dr. Flury[2] in the pharmacologic institute at Würzburg, which, under Faust's leadership, has contributed so much of importance regarding animal poisons, a new point of view has been introduced into the consideration of the symptomatology of trichinosis. Let us take into account, prior to a review of Flury's findings, how manifold the clinical manifestations of this disease may be and how difficult it thereby becomes to explain them from the purely mechanical theory of pathogenesis hitherto tacitly adopted. In addition to the symptoms related to the stomach and intestines, to vomiting and diarrhea, there may be muscular pains even before the muscle is invaded. Then come the myositis and the localized muscular symptoms. Edema makes its appearance at points remote as well as near to possible places of parasitic invasion; extreme fatigue, respiratory trouble and dyspnea may supervene, and capillary hemorrhages, alterations in the blood-picture, violent temperature fluctuations, extreme cachexia and other conditions arise to be explained by any adequate theory. Flury has demonstrated that poisonous products arise in connection with the evolution of the trichinae, precisely as it was shown some time ago that certain intestinal worms liberate toxic substances which are by no means to be overlooked even if the organisms themselves do not leave the lumen of the alimentary tract.[3]

The toxic consequences of infection with trichinae, however, are not to be sought solely in the poison products derived from the worms themselves. It is further necessary to take into account the chemical products which arise from the degradation of the invaded and damaged muscle tissue. It is the combination of such toxic factors that gives rise to the characteristic disease manifestations. This is clearly indicated by the fact that Flury has been able to initiate and imitate the varied symptoms already enumerated in animals by feeding them with the toxic extracts of trichinosed flesh. Obviously, in such a procedure the worms as such, that is, as living organisms, are not concerned; and thus the entire symptom-complex of trichinosis is referable to an intoxication of the host by pharmacologically active chemical compounds.

The poverty of infected muscle-tissue in glycogen throws a side-light on the biology of the trichina parasite. Like the related intestinal worms, it requires an abundance of available energy, preferably the easily assimilated carbohydrates, to facilitate the rapid metamorphoses and developmental changes that the trichinae undergo. For this reason, apparently, the young trichinae seek the muscle-tissues, which normally furnish an excellent store of glycogen. The liver and kidneys of infected hosts have also been found deprived of this carbohydrate. That the muscle-cells are profoundly altered is indicated by an undue accumulation of creatin and purin compounds observed in them; and the urine of infected animals with its disturbed partition of nitrogenous constituents bears further testimony to the marked chemical upset which is experienced.[4]

Trichinosed muscle actually contains highly active muscle poisons, which can provoke symptoms of rigor and tonus. Perhaps it is the purin derivatives which are here responsible, just as the volatile acids yielded by the trichinae themselves are chargeable with the symptoms of local irritation like the diarrhea and vomiting. Basic products of muscle disintegration, derivatives of the toxic guanidin series, may be the instigators of the nervous phenomena, and still other active chemical constituents may occasion the hemorrhages and localized edemas. To-day this is no longer a novel assertion for the etiology of such pathologic manifestations.

It matters little, for the moment, that the actual toxic substances are not yet isolated and identified. There is enough novelty in representing trichinosis as a disease characterized by profound pharmacologic effects due to chemical rather than purely mechanical causes. We are thus prepared for a toxicologic as well as a morphologic chapter in future discussions of this still all too common malady.

WATER-SUPPLY FROM THE GREAT LAKES

Advance sheets have been received of the report by experts of the International Joint Commission of the United States and Canada on the extent and causes of pollution of boundary waters of the two countries. As will be remembered, this commission was appointed in order to fulfil treaty obligations entered into between the United States and Great Britain, Jan. 11, 1909.

For the purpose of making investigations into the extent and causes of the pollution of boundary waters, the commission had the services of Dr. A. J. McLaughlin of the U. S. Public Health Service as chief sanitary adviser and director of field work, and Dr. J. W. S. McCullough, chief health officer of Ontario, and Dr. John A. Amyot, professor of hygiene of the University of Toronto, as consulting sanitary advisers. The field studies covered the period from April to October, 1913, and related to the waters of the Rainy River, parts of Rainy Lake and Lake of the Woods; that part of Lake Superior known as Thunder Bay; St. Mary's River; Lake St. Clair; Detroit River; portions of Lake Erie; the Niagara River; the western and eastern ends of Lake Ontario; the St. Lawrence River to Cornwall, and that portion of the St. John River which forms the international boundary between Maine and New Brunswick. Seventeen laboratories were operated at different points, samples of waters were taken from 1,400 sampling-points, and more than 19,000 samples were examined bacteriologically.

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[1] For a discussion of some of these features see the paper by Van Cott and Lintz in this issue of The Journal, p. 680.

[2] Flury, F.: Beiträge zur Chemie und Toxicologie der Trichinen, Arch. f. exper. Path. u. Pharmakol., 1913, lxxiii, 164.

[3] Flury, F.: Zur Chemie und Toxicologie der Ascariden, Arch. f. exper. Path. u. Pharmakol., 1913, lxvii, 294. The Toxic Properties of Familiar Intestinal Parasites, editorial, The Journal A. M. A., May 4, 1912, p. 1377.

[4] Compare Flury, F., and Groll, H.: Stoffwechseluntersuchungen an trichinösen Tieren, Arch. f. exper. Path. u. Pharmakol., 1913, lxxiii, 214.

The report presents as indexes of pollution the average number of colon bacilli per hundred cubic centimeters of water, and the number of bacteria per cubic centimeter of water. In certain localities in the Great Lakes and in all their connecting waters dangerous sewage-pollution was shown to exist, but the bulk of the Great Lakes waters remains unpolluted. The studies show that the colon bacillus is practically never present in unpolluted waters, and that the normal bacterial content of the Great Lakes waters is less than 10 per cubic centimeter. In this report, Great Lakes water is classified as being relatively pure, and slightly, moderately, seriously or grossly polluted. The sources of pollution in the order of their importance are shown to be sewage from cities, sewage from vessels, and the inevitable pollution due to the run-off from various watersheds following rains and thaws.

The distance that pollution may travel in portions of the lakes was also demonstrated. At the mouth of the Detroit River, for instance, serious pollution was shown to extend normally more than 10 miles into the lake, and at other places sewage-pollution was shown to extend as far as 18 miles from shore.

The distance of cities from zones of pure water in the lakes, the great cost of extending pipe-lines to these zones, and the engineering difficulties involved in placing intakes beyond a 70-foot depth make it impracticable in most instances for those cities to secure pure water from the lake without treatment. According to the report, the present positions of intakes are such that there is not a single municipality using water from the Great Lakes, or their connecting rivers, which can be said to possess a safe water-supply without treatment. As might be expected, the waters most grossly polluted are in the connecting rivers, along which are situated large cities.

In spite of constant pollution shown to exist in certain locations and the changing areas of pollution along shores or at the mouths of rivers due to currents, the use of untreated water by municipalities was until very recently the rule. Some municipalities were found to lack purification plants because of overconfidence of officials in water which is "safe most of the time." The terrible epidemic of typhoid at Erie, Pa., during January and February, 1911, shows the fallacy of resting content under such conditions, since the water may change from safe to frightfully unsafe within a day. For a year previous to the epidemic, the water-supply of Erie had not shown serious pollution.

Lax or inefficient methods of purification are shown to exist in certain places. In others, while purification is attempted, it is not properly checked by daily bacterial control. The report emphasizes the fact that methods of purification must be up to date and thorough or they are worse than useless, because they engender a false sense of security. To be thorough, the efficiency of methods of purification must be controlled by systematic examination of the treated water, and in order to be complete, reports on water-supply must be based also on comprehensive sanitary surveys in order that sources of occasional as well as constant pollution may be known.

The report merits careful study by every one interested in questions of public health, and is especially important to the people of the municipalities bordering on the Great Lakes. When the general public awakens to the danger which lurks in impure water-supplies, lax and inefficient methods of purification will not be permitted.

"AUTO-INTOXICATION" AGAIN ASSAILED

That The Journal does not stand alone in the strictures which it has at times placed on the wanton use of the term "auto-intoxication"[1] is made clear by the attitude of Prof. J. G. Adami, the distinguished pathologist of McGill University in Montreal. In an address[2] delivered before the Medical Society of the City and County of Denver he made this statement: "The word, in short, should and must be banished from the vocabulary of all self-respecting medical men. It is absurd to jumble all these conditions into one common heap; our duty is to recognize and classify each different form — to analyze before we synthesize." The conclusion here represented follows from a consideration of the heterogeneous symptoms which have been ascribed in particular to the "auto-intoxication" of chronic intestinal stasis. Indeed, primarily, it is the delay of fecal matter in the bowel which is made responsible for the maladies which are vaguely pictured to arise because the retarded transit of the materials in the intestine results in the production of toxins, supposedly by bacterial agencies. The poisons are then absorbed in quantities too large to be handled satisfactorily by the organs

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[1] Alimentary Toxemia—Intestinal Auto-Intoxication, editorial, The Journal A. M. A., Dec. 6, 1913, p. 2070.

[2] Adami, J. G.: Chronic Intestinal Stasis: "Auto-Intoxication" and Subinfection, Brit. Med. Jour., Jan. 24, 1914, p. 177.

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charged with their detoxication or excretion. In consequence, these circulating menaces may produce degenerative changes in almost every tissue of the body and may lower the resistance of the organism to microbial invasion. There are obviously weak links in the chain of evidence for the foregoing supposition. Nevertheless the theory has been and still continues to be used to support all manner of curative schemes from sour-milk therapy to the surgical short-circuiting of the large intestine, as practiced by Sir Arbuthnot Lane.

The popularization, if not the actual introduction, of the word "auto-intoxication" began — so we are assured by Adami — in 1887, with a blunder by the French clinician Bouchard, "which has shown its fell influence all through these years up to the present moment." Self-poisoning has an obvious connotation and must be conceived, properly speaking, as due to substances arising within the organism — to products of metabolism or derivatives of disordered or disintegrated cells. We quite agree with Adami that products arising in the alimentary tract by the action of invading micro-organisms are not auto-intoxicants in any strict sense. As he remarks, poisons originating in the digestive tube originate outside of the body every whit as much as if they had their origin in the vaginal chamber or on the skin. With "sublime heedlessness" Bouchard jumbled all varieties of harmful factors which find their way into the gastro-intestinal canal. Meat-poisoning, whether infective or chemical, internal strangulation and frank infections like typhoid fever and cholera, were put into common category of intestinal "auto-intoxication"— word which has become a shibboleth.

Adami has directed his criticism in particular against the propaganda of Sir Arbuthnot Lane. While granting freely that removal of a permanently damaged colon has in some instances given a new lease of life to patients, converting chronic and progressive invalidism into health and activity, the contention that the colon is merely a "common sink" must be challenged. Although the symptoms and diseases enumerated by Sir Arbuthnot Lane may follow intestinal stasis, at least a large proportion of them may originate independently of such stasis. It is a grave matter to start an epidemic of operative surgery purely on an empiric basis in which the vague conception of auto-intoxication plays a dominant part. Surely we cannot charge the true products of digestion with harmful propensities; and if we seek for something of toxic nature, tangible and demonstrated in the domain of the products of bacterial action of the foodstuffs, the evidence is far from convincing. Indol and phenols, amins of diverse varieties, and microbial toxins of uncertain origin give opportunity for a play of words that still falls far short of conviction. Adami has therefore offered another hypothesis.

Properly made blood-cultures are said to afford a high proportion of positive results in cases of continued intestinal stasis. May it not be that most, if not all, of Lane's symptoms which have not so far been demonstrated to be due to intoxication are such as follow subinfection, not necessarily originating through the lower bowel, but due to the carriage of bacteria through the mucous membrane at any point from the mouth to the anus? The "subinfection" theory of Adami demands a word of explanation. He contends that not only the lymph-nodes, but also properly prepared organs, such as the liver and kidneys of healthy animals, constantly afford cultures of pathogenic and non-pathogenic bacteria; that through the agency of leukocytes bacteria are constantly being carried into the system and as constantly being destroyed in the healthy animal; that with inflammatory conditions in the alimentary tract and greater accumulation of leukocytes in its walls there must be greater passage of these from the surface and more extensive carriage of bacteria into the system. Foci of active infection may thus be set up on the one hand, or on the other, a condition which Adami has termed "subinfection"; that is, the bacteria here do not multiply and produce suppuration, but become destroyed, and with their destruction liberate toxins which poison the cells immediately about them. The accumulative action of such poisons may bring about the death of certain cells and their replacement by fibrous tissue. Adami argues that it is more rational to regard the evil effects of intestinal stasis as, in the main, the result of conditions favoring subinfection and low forms of infection than as a result of chronic intoxication.

A discovery of the real cause of symptoms is the best forerunner of appropriate means of treatment. We ought no longer to be content with so unmeaning a term as "auto-intoxication" on which to build therapeutic procedures. Like the once-feared "deadly night air" of the malarial regions or the diphtheria-producing effluvia from damp soil or the sewer-gas bogey, the equally vague "auto-intoxication" must justify itself in fact or be relegated to the rubbish-heap of the past. The burden of proof now rests with those who still prefer to perpetuate the word.

THE WORK OF THE PHILIPPINE BUREAU OF HEALTH

The satisfactory experiences of the United States government in Cuba and Porto Rico, in its Panama Canal enterprises and in the administration of the Philippines has in good measure silenced the criticisms of those who have maintained that our nation is not adapted either in temperament or by training to undertake larger problems of colonization and expansion. Any one who desires to discover some of the elements which spell success in such great enterprises will find an opportunity in the history of the hygienic reforms which have been instituted in the various places in which the government has been called on to cope with new questions and master serious situations. The Annual

Report of the Bureau of Health for the Philippine Islands,[1] which has just reached us, is replete with topics of interest and with evidences of the aggressive progress which has wrought such marvelous changes in our insular possessions.

The Director of Health, Dr. Victor G. Heiser, has remarked that a health official has three primary duties — the care of the well, the education of the people with regard to the conditions of health, and the advancement of life through sanitary science. These are exemplified in the recital of the many varied lines of activity which are conducted by the Philippine Bureau either directly or under its close supervision. Its diverse responsibilities would scarcely be surmised by those who have in mind the comparatively limited field which is usually covered by health organizations in the United States, and involves, essentially, the collection and compilation of vital statistics and the protection of the public from infectious diseases. To all this there have been added, in the Philippines, the distribution of public charities, the care of the insane, of orphans and of the aged, the administration of general and special hospitals, the hygienic and medical care of civilian employees (of whom there are over 12,000 in the service), the administration of the Food and Drugs Act, the duties of coroner's physician and police surgeon, the making of all physical examinations for entrance into public service, and the enforcement of plumbing and building ordinances and investigation of water-supplies, in addition to many other duties. Surely the successful performance of a work of this magnitude is a cause for national pride and an occasion for local congratulation.

Some of the details of last year's work by the bureau at Manila, as brought out in its fourteenth annual report, call for notice. Health conditions for the entire archipelago have been excellent. No serious epidemic of disease occurred, with the exception of isolated cases of plague in the city of Manila. A negative record of this sort represents not accident, but rather the triumph of efficiency, and shows what American organization can cope with. We have at times in these columns supported the contention now so frequently made by modern sanitarians that health is a purchasable commodity. Director Heiser gives concrete illustrations, in his report, of the definite lowering of the death-rate by the expenditure of a definite sum of money. For instance, the installation of artesian wells produced a measurable reduction in the death-rate and a great improvement in the sick-rate in communities in which such water was used. The regular routine use of quinin among the inmates of the Iwahig Penal Colony clearly demonstrated that, in spite of the fact that malaria of a most severe type is present on all sides and caused a high death-rate, yet the inmates of the colony are as healthy as the people of New York. The elimination of intestinal parasites among a given thousand inhabitants produces a marked improvement in general health. In Manila, in spite of the fact that small-pox is constantly imported and formerly hundreds died of it annually, there has not been a single death from this disease, because the population is kept thoroughly vaccinated. In those sections of Manila in which the housing conditions of the poor were improved there was a marked betterment in the general health. The lowering of the death-rate of the city of Manila when water from the uninhabited watershed is used and the increase in the rate when ordinary river water is used has been unintentionally demonstrated a sufficient number of times to leave no room for doubt that the new water system, in the number of human lives which it saves, is worth all that it cost.

Aside from the special medical emergencies that occur in the tropics, hygienic problems are raised in connection with the peoples of the far East which rarely need to be taken into account in continental Europe or the United States. They involve religious complications that must be managed with great tact. Thus the insanitary conditions caused by the large number of persons who daily visit Antipolo for the purpose of worshiping at the shrine of "Nuestra Señora de la Paz y Buen Viaje" still continues to be a great sanitary menace. Frequently ten thousand or more persons go daily to this town, which is not provided with adequate sanitary facilities for meeting the needs of so many persons. Shocking conditions ensue. At times when cholera or bacillary dysentery or other dangerous communicable disease is present, the opportunity for their spread is practically unlimited, as has been amply demonstrated by sad experiences in the past. Recommendations have constantly been made with a view to minimizing the danger, but thus far they have gone largely unheeded.

The death-rate of groups involving known probabilities of risk is always a matter of interest. Among the government employees for the fiscal year 1912-1913 it was 3.18 per thousand. Dr. Heiser asserts that, after reasonable allowance is made for the small number of very old persons in government employ and the absence of children therefrom, and the further fact that the employees are mostly preferred risks, the death-rate is still lower than that of the civilian population of any other country. The rate among Americans was 2.47 per thousand; the rate among Filipinos was 3.46.

Owing to the absence of the more dangerous communicable diseases in epidemic form the bureau has found opportunity to carry on a vigorous campaign of education, particularly by the distribution of literature on hygienic topics. A pamphlet on "Insects and Disease" is used for teaching in the public schools. The importance of proper habitations, the nature of beriberi, the poisonous fishes of the Philippines, dysentery, etc., are specimen topics which are discussed in print and receive wide circulation through the public press. Attention is beginning to be called to the patent-medicine evil which is now being exploited in the islands.

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It is an undeniable fact that many persons have been led to expect disagreeable symptoms from vaccination because of the sequels, which at times in the past have made this procedure annoying to the subject. To-day it ought to be frankly admitted that for the most part these objectionable features are undoubtedly the result rather of the vaccination than of the vaccinia. Isadore Dyer[1] of the Tulane University College of Medicine in New Orleans has strongly urged the modification of certain common practices in connection with vaccination in the belief that they not only represent an unnecessary hardship and discomfort, but also contravene the best hygienic postulates in developing immunity to small-pox by producing vaccinia in the subject. Many operators leave the "after-treatment" of vaccination to the person concerned, indifferent as to the vesicles, the pustulation and the pit or pock-mark deemed the evidence of a successful vaccination. Dyer points out that when the vesicle forms at the site of inoculation the person inoculated with the virus has vaccinia, just as much as the person with a chancre has syphilis. He insists that the vaccination should stop at the vesicle, and that the pustule — a sign of local infection with pus organisms — should be prevented. In small-pox itself every effort is made to avert the appearance of pustulation and the consequent pitting. Why not in vaccination? If we admit that the vaccination process should stop at the vesicle and that pustulation is not only unnecessary but even undesirable, then the eruption should be checked before the objectionable stage by purposefully breaking the vesicle and treating the site antiseptically. Dyer remarks that the evils of vaccination are prevented by such a procedure; there can be no impetigos, and multiforme erythema and its congeners cannot result from pus absorption. Dyer ventures the contention that it would be better to make sure of the most complete protection against small-pox by making sure of the highest obtainable immunity against vaccinia. Would it not be better, he asks, to vaccinate the subject repeatedly until the vaccine no longer takes? In other words, if a vesicle forms, vaccinate again, at once rather than at the end of seven years, and continue vaccinating as long as a vesicle forms, until the person is completely immunized.

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Medical News

DISTRICT OF COLUMBIA

Washington

Women's Clinic Opens.—A women's auxiliary clinic has recently been opened at 1716 Thirteenth Street, N. W. The object of the institution is the treatment of women who are unable to engage the services of an outside physician.

Red Cross Building.—Plans for a Red Cross building in memory of the women nurses of the Civil War have been approved by the commission appointed by Congress to select a site. The property selected is that bounded by Seventeenth and Eighteenth Streets and D and E Streets, and is between the Corcoran Gallery of Art and Continental Hall. The plans provide for two stories and basement, an assembly hall on the first floor, a large museum in the basement and numerous offices. There is now available a fund of $700 000, $300.000 appropriated by Congress and $400,000 contributed by individuals.

ILLINOIS

Personal.—Dr. William A. Cochran, Danville, has resigned as chief surgeon of the Soldiers' Home.

Honors Pioneer Physician.—Madison County Medical Society, headed by Dr. James L. R. Wadsworth, honored a pioneer physician of Southern Illinois by finding and restoring his grave and erecting a monument to Dr. Reuben Young Meack, one of the earliest physicians of Collinsville, who died in 1832.

Medical Alumni Endorse President.—At a meeting of the Medical Alumni Association of the University of Illinois, resolutions were adopted reaffirming the faith and confidence of the alumni in President Edmund Janes James, pledging him their unanimous and hearty support, congratulating him on his work, and hoping "that such diligent and painstaking service would be rewarded by a broader influence over the state."

New Officers.—Logan County Medical Society at Lincoln, February 12: president, Dr. Walter W. Coleman; secretary-treasurer, Dr. Harry S. Oyler, both of Lincoln.——Lincoln Physicians' Club, February 12: president, Dr. Carl H. E. Rembe; secretary-treasurer, Dr. Harry S. Oyler.——Perry County Medical Association at Du Quoin, January 21: president, Dr. Elmer J. Burch; secretary-treasurer, Dr. Rolla D. Pope, both of Du Quoin.

Chicago

School Dental Dispensaries.—The Health Department appropriation for 1914 contains provision for the salaries of operatives of ten school dental dispensaries. During the last year, the dental inspectors examined 26,655 children, 24,334 with dental defects. In the dental dispensaries 26,929 treatments were given, 17,330 fillings were made, and 13,348 teeth extracted.

To Study Plagues of China.—President Harry Pratt Judson of the University of Chicago has been granted a leave of absence from March until November for a trip to China. He will be accompanied by a medical expert, and intends to gather data on the study and practice of medicine, and the methods in use for the protection of the public health in China. Dr. Judson is a trustee of the Rockefeller Foundation.

Leper Found in Chicago.—Charles Wallgren, a sailor and native of Sweden, formerly a worker in the South Chicago steel mills and a patient in the Cook County Hospital, was found to be suffering from leprosy, February 21. On February 13 he was brought to the hospital from the Illinois Steel Company's mills, and eight days later a diagnosis of leprosy was made by Dr. Frederick C. Harris and confirmed by Dr. J. A. Riley of the Department of Health. At present the patient is being isolated in a private room in the hospital. No decision has yet been reached as to the ultimate disposition to be made of the patient. He is said to be suffering from both anesthetic and tubercular leprosy.

New Rules to Diminish Contagion.—The current issue of the bulletin of the Department of Health, Chicago, announces that new quarantine regulations will be provided which will permit persons from families where contagious diseases exist to work as usual and to eat and sleep at home under certain restrictions. The rules proposed are as follows:

Diphtheria—General rules apply, except that teachers, or persons similarly employed, or milk dealers may not continue at work. Use of antitoxin urged. No visitors. Termination of quarantine only on microscopical proof of termination of the disease. Complete disinfection after two successive days show no disease present.

Scarlet Fever—Same as for diphtheria. Termination at the end of the "peeling" period, of discharge from ear and nose, of acute inflammation of the tonsils.

Measles—"Susceptibles" may use adjoining yard under observation if no others are using it. Persons who have had measles may go about business. Pupils or teachers must stay from school eighteen days after exposure.

Whooping-Cough—First two weeks patient isolated in house or yard. After then patient may go abroad if tagged with sign reading "Whooping-Cough" worn about the arm. No children in places of general assembly.

Infantile Paralysis—Same as diphtheria, with screen to shut out flies. Disinfection.

Streptococcus Sore Throat—Warning to milkman. Comparative isolation.

Chicken-Pox—Vaccination if possible; susceptibles must stay from school. Persons who have had it may attend on doctor's certificate.

Mumps—No warning cards. Practical isolation. Children must remain from school unless they have had disease.

On March 1, the city, which has been divided into one hundred school districts, each of which is detailed to a health officer and nurse, is to be merged into fifty field districts. each of which will have an assistant health officer in connection with contagious diseases. These districts are to be combined into twenty-five quarantine districts, each of which will have a quarantine officer, and each group of five quarantine districts is to be supervised by a health officer. Over these supervisory health officers will be six inspectors, all working full time, having quarters in the City Hall, under orders of the Commissioners of Health.

INDIANA

Health Officer Not Allowed Expenses for Driving Own Conveyance.—The attorney-general has rendered an opinion to State Health Commissioner Dr. John M. Hurty, that a health officer is not allowed expenses for driving his own horse and buggy or motor-car while discharging his duties.

Small-Pox in an Infant of Two Weeks.—Two weeks after it was born the infant son of Ora Mix of Indianapolis broke out with small-pox. The mother broke out with the disease shortly after the birth of the child. The father was in the hospital suffering from small-pox at the time the child was born.

Personal.—Dr. William G. Ralston, Evansville, celebrated his ninety-fifth birthday anniversary, February 15.——Jack J. Hinman, Jr., has resigned as city chemist of Indianapolis to become assistant director of the epidemiologic laboratory of the University of Iowa, Iowa City.——Dr. Otis L. Schrock, Greenstown, who sustained a fracture of the skull when the sleigh in which he was riding was struck by a traction-car, February 15, is under treatment at the Grant County Hospital, Marion.——Dr. William F. Work, Charlestown, suffered a stroke of paralysis at New Smyrna, Fla., where he was spending the winter.

IOWA

Sanatorium Notes.—The Story City Sanatorium is almost completed and will be opened about April 1.——Scott County has completed its sanatorium for tuberculosis, which will accommodate forty patients.

Free Clinics for Schools.—Free clinics for children attending the Wooster School, Sioux City, will be held every Tuesday and Friday at the Wall Street Mission. The examinations will be in charge of Dr. John P. Savage.

Addition to Medical Library.—Drake University has turned over its medical library of more than one thousand volumes to the state library. The legislature will now be asked to employ an assistant librarian for the medical department of the library.

Wisconsin Professor Speaks in Iowa.—Dean Charles R. Bardeen of the school of medicine of the University of Wisconsin, delivered the annual address of the University of Iowa chapter of Sigma Xi, February 18, on "The Effect of Physical and Chemical Agents on Development."

Veteran Physicians Honored.—On January 20, the Bremer County Medical Society held a reception and banquet in honor of Drs. Thomas D. Ford, Plainfield, and David S. Bradford, Janesville, the two veteran physicians of the county, at which a chair was presented to each of the beneficiaries.

Non-Faculty Members Barred from University Hospital.—New regulations have been put into effect by the State Board of Education concerning the University Hospital, which are said to have the effect of excluding Iowa physicians who are not members of the faculty from the use of the hospital.

Linn County Physicians Approve Reputable Advertising.—At the meeting of the Linn County Medical Society at Cedar Rapids, February 15, a resolution was passed unanimously endorsing and commending the *Cedar Rapids Tribune* in its policy of accepting nothing but reputable advertising and refusing to print the claims of various patent medicines and the insidious and preposterous claims of the so-called 'quacks' and 'fake' medical institutions."

New Officers.—Des Moines Hospital Association, January 16: president, Dr. Erwin Schenk; vice-president, Dr. Charles E. Holloway.——Adair County Medical Association at Greenfield, January 8: president, Dr. Ira J. Gibson, Fontanelle; secretary, Dr. James A. Harper, Greenfield.——Blackhawk County Medical Association at Cedar Falls, January 13: president, Dr. Frank T. Hartman, Waterloo; secretary, Dr. Ida G. Rhoades, Cedar Falls.——Henry County Medical Association at Wayland, recently: president, Dr. D. S. McConnaughey, Wayland.

Personal.—Dr. Isaac M. Lovett, Lineville, was thrown from his buggy in a runaway accident, February 18, and seriously injured.——Dr. Herman A. White, Clinton, fractured his arm while cranking his motor-car, February 16.——Dr. Charles H. Preston is reported to be critically ill at his home in Davenport, from cerebral hemorrhage.——Dr. Daniel D. Jay, Pulaski, has disposed of his office and residence and will move to New Mexico.——Dr. Clara B. Earley, Mt. Pleasant, a member of the staff of the Mt. Pleasant State Hospital, has resigned her position to accept a similar one with the Minnesota State Hospital, St. Peter.

MARYLAND

Report of the State Sanatorium.—The annual report of the board of managers of the Maryland Tuberculosis Sanatorium recommends that the state care of the tuberculous be extended. Hospitals for advanced cases in the centers of population are most urgently needed for this work. Especially is some place needed for negroes in advanced stages of tuberculosis. The total population of the sanatorium is now 435 beds.

For Negro Betterment.—To discuss the betterment of the sanitary condition of the negro in Baltimore, a meeting of prominent white persons and many colored residents was held in McCoy Hall, Johns Hopkins University, February 17. One of the principal topics discussed was the need of a hospital for the treatment of chronic tuberculosis among negroes. A bill will be introduced in the present General Assembly asking for an appropriation to establish a sanatorium for the treatment of negro consumptives.

The Insane in Maryland.—The annual report of the Lunacy Commission shows that the total number of insane persons in Maryland on September 30 of last year was 4,754, of whom 4,500 were in state, county or private institutions, 54 on the waiting list of the superintendent of city charities, Baltimore, and 200 on the waiting list of the Rosewood Training School. The ratio of the insane to the population was 1 to 310 in 1912, and in 1913, 1 to 287. The percentage of alcoholics to the total number, last year, was 12.7.

Small-Pox Epidemic.—There has been an epidemic of small-pox at Warren, Baltimore County, where it was necessary to quarantine the town and place the situation in charge of the State Board of Health.——Small-pox in the city of Baltimore has been spreading at a greater pace than at any time during the past year. The total number of cases are now nearly a hundred. The most serious turn of the situation has been the number of cases among white men who have contracted the disease and have still been going to their places of business. Quarantine Physician Richardson has 81 cases of small-pox in the hospital and it has been necessary for Health Commissioner Nathan R. Gorter to rent additional quarters adjoining the Health Department as detention rooms for small-pox cases. The health commissioner is urging general vaccination.

NEW HAMPSHIRE

New Pension Board.—Dr. Albert F. Mulvanity has been appointed pension examiner, and Drs. Benjamin G. Moran and Samuel S. Dearborn have been reappointed medical examiners for Nashua.

Health Day.—Meetings to consider public health problems were held all over New Hampshire, January 16, in accordance with the proclamation of Governor Felker, who expressed a hope that "it would serve to focus thought and stimulate action along the lines of prevention and resistance of disease, concentrate action and result in greater efficiency of purpose."

Hospital News.—The regents of the State Board of Medical Examiners have approved the training schools of the Wentworth Hospital, Dover; Mary Hitchcock Memorial Hospital, Hanover; Elliot, Sacred Heart, Beacon Hill and Notre Dame hospitals, Manchester; The State Hospital, Margaret Pillsbury General, and Women's Memorial hospitals, Concord; County Hospital, Goffstown; Cottage Hospital, Woodsville; Memorial Hospital, North Conway; Laconia Hospital, Franklin; Morrison Hospital, Whitefield; Memorial Hospital, Nashua; Cottage Hospital, Exeter, and the C. F. Wright Memorial Hospital, Newport.

Bulletin on Tuberculosis.—The January, 1914, number of the *Quarterly Bulletin* published by the State Board of Health of New Hampshire is devoted entirely to the subject of tuberculosis. Statistics are given as to the occurrence of tuberculosis in the state for a period of twenty-eight years. The remainder of the report is devoted to a description of the disease, methods of prevention, and how individuals with the disease and those around them should live and conduct themselves in order to arrest or cure the disease and prevent its spread. The instructions are practical and easily understood, and the bulletin makes a valuable educational document in the campaign against tuberculosis in the state.

NEW JERSEY

New Officers.—Health Officers of the State of New Jersey, at Trenton, January 23 and 24: president, Dr. Frederick W. Sell, Rahway; secretary-treasurer, Dr. C. H. Wells, Montclair, and chairman of executive committee, Dr. J. Alexander Browne, Paterson.——Physicians' Automobile Association of the Oranges, February 17: president, Dr. Edgar Calvin Seibert; secretary, Dr. Charles Dane, both of Orange.——Newark Medical League, tenth annual meeting, January 19: president, Dr. Louis L. Davidson (reelected); secretary, Dr. Hyman S. Emil. ——Newark City Hospital Alumni Association, January 27: president, Dr. Frank W. Cornwell, Plainfield; secretary-treasurer, Dr. Raymond J. Mullin, Newark.

Personal.—Dr. Edward Mulvaney, Jersey City, suffered amputation of one finger of his right hand as the result of a Roentgen-ray burn.——Dr. Florentine M. Hoffman has resigned as city physician of New Brunswick.——Dr. Thomas W. Harvey, Jr., East Orange, has been elected president of the Infant Hygiene League of the Oranges.——Dr. Daniel Strock has been elected secretary of the Camden City Dispensary, vice Dr. H. Genet Taylor, resigned, after forty years of service.——Drs. William H. Pratt, Edward W. Rossell, Howard F. Palm, Emma M. Richardson, Arthur J. Casselman and Robert L. Sheppard have been appointed members of the staff of the dispensary.

NEW YORK

Sanitary Supervisors.—The names of the six new sanitary supervisors, authorized by the public health law, are announced. They include Dr. John J. Mahoney, supervisor of public health of Jamestown; Dr. Charles S. Prest, Waterford; Dr. Charles C. Duryea, formerly mayor of Schenectady; Dr. Otto R. Eichel, Buffalo; Dr. T. Wood Clarke, Utica, and Dr. Francis S. Swain, Corning. All these appointments are made pending the civil service examinations to be held March 7.

Examinations for Sanitary Inspector.—The State Civil Service Commission will conduct examinations for the position of sanitary inspector in various cities of the state, March 2. The applicants must be citizens, physicians, and between 28 and 60 years of age. They must devote their entire time to sanitary inspection. They must have served as health officers for four years, received competent instruction, hold diplomas or satisfy the board as to their qualifications.

Doctors Oppose Nurses' Bill.—On February 17 a hearing was given on the Seely Bill which prescribed rules for the practice of nursing and prohibits the use of the term "nurse" except by those who have had at least a two years' course in a hospital training school. Thirty-eight of the important hospitals of New York appeared in opposition to the bill. It was held by the opponents of the bill that its passage would cause a great deal of suffering among poor people who could not pay $25 a week for a trained nurse.

New York City

Bellevue Overcrowded.—There are 1,404 patients in the institution. The nearest approach to the present condition was during similar weather in March, 1911, when there were 1,330 patients under treatment. All the corridors and small rooms have been pressed into service, and all extra beds and bedding are in use.

Women Ambulance Surgeons.—For the first time, it is said, in the history of Bellevue Hospital, women have qualified as ambulance surgeons. Drs. Helen L. Balliser and Anna Tjonslands passed the examinations held February 13, and are eligible for appointment July 1. They are both graduates of Cornell Medical School.

Memorial to Surgeon of Titanic.—A memorial fund has been presented to St. Vincent's Hospital in honor of Dr. William Francis Norman O'Laughlin, surgeon of the *Titanic*, who went down with the ship. The fund is to be used in remodeling and equipping the emergency department where a tablet in memory of Dr. O'Laughlin will be placed.

Milk Dealers Must Conform to Standards.—On Oct. 28, 1913, the Board of Health ordered pasteurization of all milk sold in this city except that conforming to the standards laid down for Grade A. A number of milk dealers have delayed installing pasteurizing apparatus and have not complied with the order of the department by February 1. At a meeting of the Board of Health a resolution was adopted denying permission to delay compliance with the provisions of the sanitary code, relative to pasteurization and the labeling of the milk-supply.

Aliens a Burden on the City.—The report of the Hospital Investigating Committee to the Board of Estimate shows that the city spends more than $1,000,000 a year for the care of aliens in its hospitals and almshouses, and nearly $400,000 is spent on aliens who have been in the United States less than five years. The report states that a large proportion of these aliens were afflicted before they came to this country with the diseases for which they are now being treated and that if the United States Public Health Service had sufficient inspectors and facilities at Ellis Island many of these aliens would not have been allowed to enter the country. The report further declares that the State Board of Charities has not fully exercised the function of removing aliens delegated to it by law. It has in known instances failed to examine a substantial proportion of the aliens referred to it for investigation and deportation. The present power of removal has not afforded adequate relief to the city, nor does it seem likely to do so.

OHIO

State Board Moved.—The State Board of Health has moved its offices from the Hartman Theater Building to Page Hall, at the Ohio State University, Columbus.

Sanatorium Opens.—The Franklin County Tuberculosis Sanatorium near Columbus, with a capacity of 120 patients, opened February 16, and twenty-nine patients were admitted.

Testimonial to Dr. Gilliam.—On February 16, the Columbus Academy of Medicine tendered to Dr. D. Tod Gilliam a testimonial banquet, at which he was presented with a silver loving-cup suitably inscribed.

Contagious Hospital Provided.—An ordinance has been passed by the city council of Canton giving the Board of Health authority to expend $5,000 to provide the city with a hospital for contagious diseases.

New Officers.—Union Medical Association, one hundred and sixty-second session, at the State Hospital at Massillon, February 11: president, Dr. Henry C. Eyman, Massillon; secretary-treasurer, Dr. John H. Seiler, Akron (reelected for a seventeenth term).

Society Enlarges Its Field.—The Muskingum County Medical Society has been reorganized as the Academy of Medicine of Muskingum County, and dentists, chemists, sanitary engineers and other persons who are engaged in scientific pursuits will be admitted as honorary members. About twenty new members were admitted at the first meeting of the reorganized society.

Personal.—Dr. William E. Wheatley, Lorain, fell on the ice February 16, fracturing his right arm at the wrist.——Under the reorganization of the Dayton Health Department, Dr. Alvin L. Light became City Health Commissioner, and has appointed six district physicians and one epidemiologist.——Dr. Morgan J. Jenkins, Plain City, is ill with pneumonia at the Grant Hospital, Columbus.

Cincinnati

Banquet German Chemist.—Dr. Wolfgang Ostwald, professor of chemistry in the University of Leipzig, Germany, was given a banquet February 11, by the Cincinnati Chemical Society and the Cincinnati Society for Medical Research.

Personal.—Dr. Charles F. Sanborn, Chicago, has assumed charge of the Cincinnati General Hospital. Dr. Arthur C. Bachmeyer, formerly superintendent, has accepted the superintendency of the Tuberculosis Hospital.——Dr. Archibald I. Carson has been appointed clinical professor of surgery of the University of Cincinnati.——Dr. Gustave L. Krieger has succeeded Dr. Robert W. Bledsoe, resigned, as clinical instructor in otology and laryngology.——Dr. H. Kenham Durham has been elected president of the Cincinnati Antituberculosis League.

OKLAHOMA

New Medical Board.—The governor has appointed a new medical board for the State Hospital for the Insane, which consists of Dr. Philip F. Herod, Alva; Dr. Elmer C. Ludlum, Carmen, and Ralph A. Workman, Woodward.

Personal.—*Dr. L. M. Martin, Newkirk, sustained a fracture* of the scapula when his motor-car overturned recently.——Dr. Edward F. Hurlbut, Chandler, who suffered injuries in a runaway accident recently, has recovered.——The suit against Dr. Fred R. Sutton, Bartlesville, for malpractice, was suddenly terminated, February 13, on the motion of the lawyer for the plaintiff, who appreciated that his client had failed to make good the allegations.

New Officers.—Pontotoc County Medical Society at Ada: president, Dr. Sidney M. Richey, Francis; secretary-treasurer, Dr. Isham L. Cummings, Ada.——Rogers County Medical Society at Claremore: president, Dr. J. C. Bushyhead, Claremore; secretary-treasurer, Dr. Walter A. Howard, Chelsea.——Greer County Medical Society at Mangum: president, Dr. Ney Neel; secretary-treasurer, Dr. General Pinnell, both of Mangum.——Custer County Medical Society: president, Dr. Montie C. Comer, Arapaho; secretary-treasurer, Dr. Stirley C. David, Weatherford.——Jackson County Medical Society at Altus: president, Dr. Emory S. Crow, Olustee; secretary-treasurer, Dr. Dave L. Garrett, Altus.——Mays County Medical Society: president, Dr. W. C. Bryant, Choteau; secretary-treasurer, Dr. J. R. Preston, Adair.——Texas County Medical Society: president, Dr. William H. Langston; secretary-treasurer, Dr. Rutherford B. Hayes, both of Guymon.——Tulsa County Medical Society has recently been incorporated at Tulsa by Drs. Walter E. Wright, W. Albert Cook and Paul R. Brown: *president, Dr. William W. Brodie; secretary-treasurer, Dr.* Paul R. Brown, both of Tulsa.——Osage County Medical Society: president, Dr. Divonio R. Worten; secretary-treasurer, Dr. Rosco Walker, both of Pawhuska.

PENNSYLVANIA

Change at the Naval Hospital.—Rear Admiral Charles F. Stokes, who is to be the new medical officer assigned to the Naval Hospital, will take charge March 1, and Medical Inspector George A. Lung, present officer in charge, goes to the War College, Newport, R. I.

Communicable Diseases.—An epidemic of scarlet fever at Easton, among the pupils of the Centenial School building resulted in the closing of the building, February 18. The Health Board announced that physicians who failed to report contagious diseases within twenty-four hours will be prosecuted. An outbreak of mumps closed the Garret Hill class in Radnor Township near Rosemont, February 16.

Personal.—Dr. William E. Matthews, Johnstown, has been appointed inspector of midwifery for Cambria County.——Dr. Charles P. Henry has been elected health officer of Reading.——At a meeting of the Lycoming County Medical Society held at Williamsport, a movement for a medical club in Williamsport, was launched, and a committee consisting of Drs. John P. Harley, Horace G. McCormick and Robert F. Trainer was appointed to take steps preliminary to organization.

Portraits of Women Physicians Dedicated.—In order to perpetuate the memories of the first three deans of the Women's Medical College of Pennsylvania, an alcove in the Administration Building was dedicated with appropriate ceremonies, February 18. Portraits of these pioneer women workers in medical science were donated by the Alumnae Association: Dr. Ann Preston, graduated in the first class of the college in 1852; Dr. Emmeline H. Cleveland was graduated in 1853, and Dr. Rachel Bodly was dean of the college from 1874 to 1885. Dr. Clara Marshall, the dean, delivered the dedicatory address.

Philadelphia

Personal.—Dr. Joseph C. Doane, formerly chief resident physician of the Presbyterian Hospital, has accepted a position as head physician of the Shamokin State Hospital.——Dr. Samuel Stalberg, charged with refusing to answer a legal summons to appear in court, denied that he had received such summons and was exonerated by the magistrate.

TEXAS

New Clinics Open.—The Methodist University has established a free clinic in North Dallas, in the basement of the

Neighborhood House at Cedar Springs and Harwood Streets. In addition, the clinic has the services of a district nurse.——The new Houston Antituberculosis Clinic was opened January 17. A nurse is stationed at the clinic, and two physicians visit the clinic on three days each week, to examine cases of suspected tuberculosis.

Personal.—Dr. Jonathan M. Bell, mayor of Wichita Falls, is critically ill with peritonitis at his home.——Dr. B. M. Vick has been elected surgeon of the Galveston, Houston and San Antonio Railroad at Valentine, to succeed Dr. George B. Graves, resigned.——A fire at Caddo Mills destroyed the office of Dr. Walter C. Welch, with a loss of $1,000.——Dr. J. A. Orr has been appointed assistant surgeon in the U. S. P. H. S. and has been placed in charge of the newly established offices at Port Aransas.

New Officers.—Titus County Medical Society: president, Dr. Samuel C. Broadstreet; secretary-treasurer, Dr. William H. Blythe, both of Mt. Pleasant.——Walker County Medical Society, at Huntsville: president, Dr. Eugene L. Angier; secretary, Dr. John W. Thomason, both of Huntsville.——Lavaca County Medical Society at Yoakum, February 10: president: Dr. James E. Lay, Hallettsville; secretary-treasurer, Dr. Walter Shropshire, Yoakum.——Texas Association of Medical Directors, at Dallas, February 10: president, Dr. William A. King, San Antonio; vice-president, Dr. John M. McCutchan, Waco; secretary-treasurer, Dr. Matthew M. Smith, Dallas.

WISCONSIN

New Officers.—Langade County Medical Society at Antigo, February 5: president, Dr. Fred V. Watson; secretary-treasurer, Dr. John C. Wright, both of Antigo.——Fox River Valley Medical Society at Green Bay, February 5: president, Dr. W. Webber Kelly; secretary-treasurer, Dr. Richard H. Sweetman, reelected, both of Green Bay.——Sheboygan County Anti-Tuberculosis Association at Sheboygan, January 28: president, Dr. William F. Zierath, reelected.——Milwaukee Oto-Ophthalmologists' Club, January 20: president, Dr. Henry B. Hitz; secretary-treasurer, Dr. Gustavus I. Hogue.——Twin City Medical Association of Neenah and Menasha at Neenah, February 7: president, Dr. George E. Forkin, Menasha; secretary-treasurer, Dr. Thaddeus D. Smith, Neenah.

GENERAL

Personal.—Surgeon James C. Perry, U. S. P. H. S., has been granted a special leave of absence for a few days to accompany General Horras of Panama on a trip into the interior of the republic to inspect a site for a tuberculosis sanatorium.

Warning Against Lake Water.—The Public Health Service has issued a warning for the vessels on the Great Lakes against using the raw lake water for drinking purposes. So many cases of typhoid fever last year were traceable to drinking water on lake vessels that strict regulations have been formulated which will be put in operation in time for the summer excursion season.

Medical College Alumnae Organize.—Alumnae of the Women's Medical College of Pennsylvania, Philadelphia, met February 11 and organized a grand council of colleges, electing the following officers: president, Dr. Lillian Welsh, Baltimore; vice-president, Dr. Catherine MacFarlane, *Philadelphia*; secretary, Dr. Elizabeth F. Clark, Philadelphia, and treasurer, Dr. Johanna B. Leo, New York City.

The Health of the Nation.—According to a bulletin issued by the U. S. Census Bureau, February 11, the death-rate during 1913 in the registration area, based on the estimated population, was 13.8 per thousand. The rate for the same area in 1912 was 13.6 and in 1911 it was 13.9. Maryland among the states has the highest rate, 16.3, and Minnesota the lowest, 10.7. Among the cities Portland, Ore., had the lowest rate, 11 per thousand, and Memphis, Tenn., the highest, 22.9.

Southeastern Sanitarians Meet.—The Southeastern Sanitary Association, which was organized in Greenville, S. C., last May, held its first annual meeting in Columbia, S. C., February 13 and 14. The following officers were elected: president, Dr. J. LaBruce Ward, Columbia, S. C., director of rural sanitation of the Rockefeller Commission for the Study of Hookworm; vice-president, Dr. Charles E. Terry, city health officer, Jacksonville, Fla.; secretary-treasurer, Clarence E. Smith, D.V.S., Greenville, S. C. (reelected).

Tri-State Physicians Meet.—The sixteenth annual session of the Tri-State Medical Association of the Carolinas and Virginia was held at Wilmington, N. C., February 18-19 under the presidency of Dr. Southgate Leigh of Norfolk, Va. The following officers were elected for the ensuing year: president, Dr. Edward C. Register, Charlotte, N. C.; vice-presidents, Drs. J. Allison Hodges, Richmond, Va.; Charles T. Harper, Wilmington, N. C., and Frank H. McLeod, Florence, S. C., and secretary-treasurer, Dr. Rolfe E. Hughes, Laurens, S. C.

Progress on Panama Exposition Buildings.—According to a bulletin issued by President Moore of the Panama Pacific International Exposition at San Francisco, the exhibition buildings will be entirely complete and ready for installing the exhibits by July 1, 1914. The machinery palace, it is said, is practically completed now. Everything will be in readiness at the time of the opening of the Exposition, Feb. 20, 1915. Two hundred and twelve national and international congresses have already decided to meet in San Francisco in 1915

Crematory in the Canal Zone.—A crematory has been established at Ancon, located in the Ancon cemetery. It is proposed to abandon this cemetery, the location of which will become a part of the new Balboa townsite, and the crematory, now housed in a temporary structure, is for the purpose of incinerating the remains from the cemetery. Notices have been sent out to relatives or friends of persons interred in the cemetery where the addresses are available, giving them ninety days to remove bodies, after which time they will be cremated if not removed. A new site for a cemetery will be provided, probably at Corozal, and the crematory furnaces will be installed in a permanent building.

Health Department in Canal Zone.—The executive order providing for a permanent organization for the Canal Zone contains the following with reference to the establishment of a Health Department:

There shall be a health department under the direction and supervision of the Chief Health Officer. This department shall be charged with all matters relating to maritime sanitation and quarantine in ports and waters of the Canal Zone, and in the harbors of the cities of Panama and Colon; and with land sanitation in the Canal Zone, and sanitary matters in said cities in conformity with the Canal Treaty between the United States and the Republic of Panama and existing agreements between the two governments thereunder; and all matters relating to hospitals and charities.

Bequests and Donations.—The following bequests and donations have recently been announced:

Union Hospital, Terre Haute, Ind., $5,000, by the will of Elizabeth Maddox.

Rush Hospital and German Hospital, Philadelphia, contingent bequests of $25,000 each, by the will of the late Samuel Jamison, Ardmore, Pa.

Chicago Home for the Friendless, St. Luke's Hospital, Chicago Lying-In Hospital and Dispensary, Presbyterian Hospital, Passavant Memorial Hospital, equal shares in the estate of Thomas S. Kirkwood, of $400,000, after payment of bequests to ten relatives

Methodist Hospital, Philadelphia, $10,000, by the will of Samuel Felton.

To the upkeep of Dunwoody Home for Convalescents, at Newton, near Philadelphia, $1,000,000, by William Hood Dunwoody, Minneapolis, Minn.

Federation of Jewish Charities, Philadelphia, a special $25,000 donation by the children of Elias and Amelia Wolf.

Philadelphia Home for Infants, $2,000 for the endowment of a crib, by the will of Anna P. Stevenson.

Infant Welfare Society, Chicago, $10,000; Chicago Winfield Tuberculosis Sanatorium, $10,000; New Convalescent Home for Destitute Crippled Children, $10,000; Bohemian Hospital, $1,000; and Federated Jewish Charities, $2,500, by the will of Edward Morris, Chicago.

Notes Concerning Small-Pox.—Under date of February 14, small-pox was reported from Mendocino and Lake counties, Cal., and the State Board of Health declared quarantine covering a wide area. About 300 cases have been reported.——An outbreak of small-pox, comprising 45 cases, was reported from Appleton, Wis., February 11. Several cases had developed among Lawrence College students.——Under date of February 12, ten cases of small-pox were reported among the pupils in the State School for the Blind, Batavia, N. Y.——The small-pox situation at Niagara Falls has improved. Under date of February 11, it was recorded that one thousand workmen, who objected to being vaccinated, paraded the streets and made demonstrations before the homes of Mayor Laughlin and City Health Officer Gillick. The men demanded that the quarantine imposed by the State Health Department, be raised. This required that unvaccinated employees of industrial establishments be not allowed to go to work until they had been vaccinated.——Judge W. F. Ezell of the District Court in San Antonio, upheld the rule of the school board making vaccination compulsory in the schools. An injunction was asked by Dr. A. D. Zucht to restrain the board from enforcing this rule.

Railway Accidents in 1913.—Accident Bulletin 48 of the Interstate Commerce Commission gives a statement of accidents on steam and electric railways during April, May and June, 1913, and also for the year ending June 30, 1913. A summary of all casualties for the year shows that a total of 211,272 persons were killed or injured during the period, 10,964 being the number killed and 200,308 the number of injured. This is an increase over 1912 of 379 killed and 30,770 injured. In "industrial accidents" 414 employees were killed and 113,620 injured. By "industrial accidents" is meant railway employees killed or injured otherwise than in operating trains. Of the total number killed 3,715 were employees, 403 passengers and 6,846 other persons (trespassers and non-trespassers), an increase over 1912 of 80 employees killed, 85 passengers killed and 214 "other persons" killed. Among the persons injured 171,417 were employees, 16,539 passengers and 12,352 other persons, an increase over 1912 of 28,975 injured employees, 153 passengers and 1,642 other persons. The increase in deaths and injuries may perhaps in some measure be accounted for by increased number of employees and increased number of passengers carried. The total figures, however, are appallingly large and seem to show grievous shortcoming in safety provisions and administration in railroad work. Some of the shortcomings are well illustrated in the detailed analysis of railroad accidents during the months of 1913 covered by the bulletin, and by the tables which set forth in detail the character of the accidents and the manner in which they occurred. The bulletin is made up from reports of the railroads made in accordance with the Act, approved May 6, 1910, requiring common carriers engaged in interstate commerce to make full reports of all accidents.

CANADA

Public Health Meeting.—The fourth annual congress of the Canadian Public Health Association will be held at Fort William and Port Arthur, Sept. 10-11-12, 1914.

Personal.—Dr. Richard F. Preston, M. P. P., Lanark, Ont., has been admitted a member of Sir James Whitney's government in Ontario without portfolio. This makes three members of the medical profession now in the Ontario cabinet, Hon. Dr. Robert A. Pyne, minister of education, who is leading the government in the enforced absence of Sir James through prolonged illness and the Hon. Dr. Joseph O. Reaume, Windsor, Ont., minister of public works. So far there does not appear to be any medical legislation of moment before the legislature this session.——Dr. George P. Sylvester, Toronto, has gone on a trip to the Mediterranean.——Dr. A. Gordon Rice, Toronto, is suffering from a severe attack of blood-poisoning contracted at a post-mortem examination.——Through the efforts of Dr. David Low, Regina, Sask., the *Western Medical News* has been acquired by the Saskatchewan Medical Association.

Inspection of Schools.—The total staff in connection with the medical inspection of public schools in Toronto now is as follows: A chief medical inspector on whole time in charge of the department; twenty-one medical inspectors on part time; one dental inspector and four dental surgeons on part time; one superintendent of nurses and thirty-seven school nurses on whole time. The city is divided into twenty districts with one medical inspector and two nurses in charge of each. One medical inspector confines his work to tuberculosis cases among the children.——Amherst, N. S., began the medical inspection of schools in February, 1911. The medical men of the town do the work gratis and a qualified nurse is employed to assist them. In Halifax two medical inspectors were first appointed in 1909 on part time. Out of 7,018 examinations in 1912-1913 there were 840 diseased or defective conditions. In Truro some tentative work is being done under the direction of the town's medical officer of health.

Hospital News.—At a meeting of representatives of the Toronto City Council, Toronto General Hospital and the Ontario government the past week, arrangements were completed whereby the Toronto General Hospital will hand over to the City Council the "Burnside" or lying-in pavilion of the old Toronto General Hospital, until the property is sold, for the purpose of a detention hospital, to be administered by the Ontario government. The Toronto General Hospital is to ask the City Council for an annual grant of $30,000 instead of the regular $1 per patient per day for those admitted on a city order. The hospital claims that it should receive 5 per cent. on the gross amount granted by the city, namely $600,000 for the erection of the new hospital. The General Hospital has 715 beds, of which 135 are private, 30 semi-private, 520 public and 30 semi-public. The charge for the semi-private is $13.50 per week and for the semi-public, $10 per week. As all the Toronto hospitals are said to have shortages, it is expected that St. Michaels, Grace and the Western as well as the Children's will also approach the board of control for similar arrangements. For the year ended Sept. 30, 1913, the Children's Hospital had a shortage of $40,000.

LONDON LETTER

(From Our Regular Correspondent)

London, Feb. 7, 1914.

Action Against a Physician for Wrong Diagnosis

The legal hardships to which physicians are exposed even when they conscientiously discharge their duties with due skill are illustrated by the following case: A woman brought an action against a physician for alleged negligent treatment of an injury to her left knee, on the ground that he failed to diagnose a fracture of the patella and treated her for a supposed torn ligament. The physician gave evidence to the effect that he warned her that a roentgenogram should be taken, but she refused to incur the expense. He accordingly treated her on the assumption that there might have been a fracture. He also suggested the obtaining of a second opinion, but she said that she was quite satisfied. Two well-known surgeons gave evidence on the physician's behalf to the effect that even if they had roentgenograms to aid them in the diagnosis, their treatment would have been the same as his. A verdict was returned for the plaintiff.

Red Cross Aeroplanes

Last August Lieutenant-Colonel Donegan published in the *Hospital* an article entitled "The Probable Uses of Aerial Transport to the Medical Profession." He expressed the view that aerial transport would one day be provided for the wounded. He referred to experiments made by the late Colonel Cody with his 100-horse-power machine. It may be remembered that this well-known American aeronaut was engaged by the British war office and unfortunately killed by the fall of his machine. He intended to devote a machine to ambulance work and even to rig up contrivances to carry helpless patients, lying on the wings. The war office has recently decided to allow the use of an aeroplane to the British Red Cross during the coming summer to demonstrate its value as a form of transport for the wounded.

The National Campaign Against Tuberculosis

It may be remembered that one important feature of the national insurance act was the providing of money for the treatment of tuberculosis, both at home and in sanatoriums, and also for the investigation of the disease. Under the supervision of the government, schemes of treatment have been prepared all over England so as to bring skilled advice within the reach of every one suffering from the disease. There are now between 450 and 500 approved institutions for the treatment of tuberculosis, and the building of others is rapidly proceeding. The scheme involves two units, the first being the dispensary or non-residential institution and the second the sanatorium and hospital for residential treatment. There are now 250 dispensaries, and in time one will be established in every large town and within reasonable distance of every country district. The dispensary is a center for diagnosis, treatment and after-care. The patient is either treated there or sent to a sanatorium or hospital. In suitable cases a shelter (with the necessary furniture) may be lent to him for erection in his own garden. Each dispensary is under the charge of a medical officer called the "tuberculosis officer," who is a specialist in tuberculosis. The tuberculosis officers are assisted by a staff of competent nurses and health visitors. The whole arrangements are under the administration of the health officer of the district. It is estimated that the total cost of the scheme will work out about 19 cents per head of the population.

The Royal Commission on Venereal Diseases

At the eleventh meeting, evidence was given by Lieutenant-Colonel Gibbard, head of the Rochester Row Military Hospital. He said that the most important causes of the decrease of venereal diseases in the army were the improved treatment and the instruction of the men by lectures and individual talks. Other contributory causes were greater temperance, the increased attractions of the barracks, and the greater encouragement of outdoor games. The problem of the prevention of the spread of venereal disease in the civil population could best be attacked by providing early diagnosis and treatment, by enlightening the public by lectures and by promoting temperance. Arrangements should be made for free performance of microscopic examinations and blood-tests. Colonel Gibbard did not favor special hospitals for venereal diseases. Every general hospital should provide a certain number of beds, and these should be in the general wards. An outpatient department should also be organized so as to give patients every facility for early diagnosis and treatment and be kept open at hours suitable for the working classes. Compulsory notification he considered undesirable, as it would lead to concealment of the disease. Education with regard to venereal diseases should be given by lectures in large factories by selected medical men, or women (when the employees were women) and these might be illustrated by moving pictures. At the lectures great stress should be laid on the importance of seeking advice early and not consulting quacks.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Feb. 6, 1914.

Personal

February 3 the Académie de médecine elected a member in the section of medical pathology to replace the late Professor Jaccoud. Dr. Babinski, physician of the hospitals of Paris, was almost unanimously elected. This honor is a just reward for his remarkable works, which do credit to French neurology. Dr. Babinski was one of the favorite pupils of Charcot and has distinguished himself especially for his studies on the reflexes, through which he discovered the "Babinski sign," which indicates a functional disturbance of the pyramidal system. Dr. Babinski has lately been much interested in hysteria, to which he gives a new conception and a new name, "pithiatism," under which he groups especially the phenomena produced by suggestion and suppressed by persuasion. The old conception that hysteria simulates true lesions and serious disorders has disappeared.

Prophylaxis of Leprosy in France

The ministry of the interior in undertaking a scientific investigation of the prophylactic measures against leprosy which should be taken in continental France consulted the Académie de médecine, which has delegated Dr. Netter to study the question. Netter believes that to class leprosy among the reportable diseases is not sufficient to prevent its spread. A special law is necessary. As leprosy is only slightly contagious without prolonged contact, under elementary hygienic precautions it should not be necessary to isolate lepers in special establishments if these conditions can be realized in their homes. Dr. Gaucher, clinical professor of cutaneous and syphilitic diseases in the Faculté de médecine de Paris, does not believe that lepers can be sufficiently isolated at their homes. Gaucher asserts that three classes of lepers are to be distinguished in France: 1. The indigenous lepers of the South number not more than sixty. In them the disease is familial and very mild. These lepers are not a menace, and as they voluntarily isolate themselves may be cared for in their homes. 2. French citizens, infected in the colonies, have the disease in a very virulent form and should be isolated on an island in the Mediterranean under sanatorium conditions. 3. Foreigners affected with leprosy should be forbidden to enter the country. No foreign government could object.

Indirect Anaphylaxis

Prof. Charles Richet, who, as I mentioned in a previous letter, has lately been elected a member of the Académie des Sciences, at its last session made a very interesting report on a new form of anaphylaxis. With Dr. Lassablière, he observed that dogs chloroformed for the first time never present leukocytosis, either then or afterward. When chloroformed a second time, however, about three weeks afterward they presented an *intense leukocytosis*, which began the day after the anesthesia and reached its maximum on the eighth day. Richet believes that this phenomenon can be explained only on the hypothesis of indirect anaphylaxis—a hitherto unknown type. In this case the anaphylactic phenomena, in particular the leukocytosis, are due not to chloroform itself, but to the albumins produced by its influence in the alteration of the liver and kidneys. It seems then that anaphylactic substances must be divided into two groups: those causing anaphylaxis immediately, or in a few minutes, by passing directly into the blood, and those which produce it solely by causing the splitting of the albuminoids, an auto-intoxication harmless the first time and dangerous the second. This is indirect anaphylaxis.

A New Method of Antialcohol Propaganda

In view of the elections to the Chamber of Deputies soon to be held, an antialcoholic committee, just founded, named "Alarme" has organized a series of large public meetings in the principal cities of France. Various speakers selected from all political parties, all religious denominations and all professions, physicians, workmen, lawyers, members of Parliament, economists, etc., are to be heard. The committee proposes to influence the candidate through the voters. It intends to show the peril which menaces the country and the absolute necessity of passing salutary laws, and will ask each of the voters to demand that the candidates of his own party shall promise to vote for these laws. The first meeting has been held in Bordeaux under the presidency of Professor Bergonié. Dr. Regis, clinical professor of mental diseases of the medical school of that city, reported the striking fact that of about 1,800 mentally abnormal persons now in the common schools of Bordeaux, at least 80 per cent. are of alcoholic heredity.

Sale of Poisonous Substances to Physicians

The Paris Court of Appeals has just rendered an interesting decision with regard to the sale of poisons. The servant of a physician presented to a wholesale dealer in pharmaceutical products a letter bearing the forged signature of the physician and asking for ampoules of morphin. They were delivered to her three consecutive times, and by her given to the physician's wife, who had forged his signature to procure the drug. She was already a morphinomaniac and was obliged to undergo a long and expensive course of treatment. The physician brought suit against the dealer who had sold the morphin for the expenses of his wife's treatment. The court condemned the dealer to pay the doctor 300 francs ($60) damages on the ground that wholesale dealers are not authorized to sell poisons directly to physicians, but only to chemists, pharmacists and manufacturers registered for the purpose. Wholesale pharmacists who sell to physicians do so at their own risk.

The Nobel Prize for 1914

The Académie des Sciences and the Karolinska Institutet of Stockholm, which are responsible for the award of the Nobel prizes in chemistry, physics and medicine, are already drawing up the lists of candidates for 1914. Each year the members of the Swedish committee ask a certain number of eminent scientific organizations to propose candidates. The nominations are examined with scrupulous care for more than a year, as the Nobel prizes are awarded only in December. In France, the scientific medical and literary bodies so far consulted are unanimous in their choice of Professor Bouchard, member of the Académie des Sciences and the Académie de médecine.

French National Committee of Dental Hygiene

The purpose of this committee, recently founded, is the popularization of dental hygiene, for which it has organized lectures in various places and proposes to create a dental dispensary. It will also post placards giving in all French schools and in the hospitals of Paris the most elementary precepts in dental hygiene, and will distribute tooth-brushes in schools. A moving-picture film, intended to promote dental hygiene, is in preparation.

Demonstration in Honor of Professor Ehrlich

Recently an imposing ovation was given to Professor Ehrlich at the Broca Hospital.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Feb. 4, 1914.

Personal

Quite a number of new professors have been appointed recently, among them several men whose names and reputations are familiar all over the world, as, for instance, Dr. Heinrich Neumann, the famous otologist (formerly privatdocent), and Dr. G. Holzknecht, one of the pioneers of roentgenotherapy, as well as Dr. Arthur Schuller, whose researches on neurology are well known. Furthermore, Dr. Fein (rhinolaryngology), Dr. Klein (ophthalmology), and Dr. Sternberg (pathologic anatomy), received this distinction, besides several other men who are known chiefly to their German confrères.

A short time ago Dr. Joseph Hirschl, professor of psychiatry, died in Vienna at the early age of 48 years. His name was at a time well known through his reseaches into the origin of tabes and general paralysis of the insane, which he was the first to prove to be a direct outcome of syphilis.

An Isolated Outbreak of Small-Pox

The rarity of small-pox in this country makes the appearance of a case quite an interesting item here. Recently a baker's apprentice, who had been outside of Austria a short time before, fell ill, and his disease was recognized as small-pox only after he had developed ripe pustules on the face and had been carrying the goods of his employer from house to house for over a week after the commencement of his illness. Of course, when it was recognized, all necessary precautions were taken in a most stringent way, and the authorities succeeded in controlling the outbreak so far that only six persons were infected, of whom one (a boy of 4 years) died from complications. The fact that in spite of the excellent possibilities for infection, so few persons caught the disease, is explained by the nearly universal vaccination of the population of this city. We have hardly any conscientious objectors here, but nearly compulsory vaccination. It is not officially known whether or not the persons attacked in the recent outbreak had been vaccinated before the illness.

A Prize for Therapy of Diabetes

The Carlsbad practitioners offered a prize of $1,000 for the best essay on the treatment of diabetes, with chief consideration of balneotherapy, which was open until the end of 1913. Five papers were sent in, three German, one English and one Italian. The result is not known yet, but it is interesting to learn that so few doctors thought it fit to take part in this important competition.

A Lecture on Cancer

Dr. von Sielenski, the director of the scientific department of Czerny's Cancer Institute in Heidelberg, was invited to lecture a few days ago in Vienna on the modern aspects of the cancer problem. A special meeting of the Vienna Gesellschaft der Aerzte was arranged in honor of the guest. He stated that the causative agent or the primary cause of cancer has not yet been found. At present we are forced to use only animal experiments, as we cannot inoculate human beings with cancerous material. In recent years, remarkable discoveries were said to have been made as regards the infection of rats with cancer-producing worms; but control experiments showed only that infections of the stomach of rats could be produced, and the ulcerations finally healed with benign tumor formation. Also in chickens an infection with a sporidium produces ulcerations, which from unknown causes sometimes become cancerous. A large number of other parasites are known, especially in botany, which produce proliferations of epithelium, but not true cancer. Their real significance will become clear if the technic of parasitology becomes better known. On these lines the problem of cancer may be solved and thus we may hope for a cure of this disease.

Venereal Diseases Among Students

An important addition to the weapons for combating the spread of sexual diseases has been made by the institution of a special ambulatorium devoted solely to the treatment of sexual diseases among students in Vienna. The Austrian Society for Prevention of Sexual Diseases has organized the ambulatorium, which is under the direct supervision of a competent specialist. A recent report shows that 482 patients applied during the first seven months of its existence. These patients made 3,968 calls. There were 31 cases of syphilis, 268 of gonorrhea and 12 of soft chancre, while the remaining 171 patients were either not sexually ill or had nothing the matter with them. On some days the number of persons applying for advice was as high as 59. While the majority of the visitors were university students, 39 patients came from Latin schools (gymnasiums, as they are termed here); the youngest was 15 years of age, the oldest of these 19, while the oldest patient was 27. Of course, these figures give only an idea of how very much needed such an institute really is, for they constitute only a fraction of the real number of patients who, for some reason or other, would require specialist help. It is well known that the liberal vocations suffer considerably from these diseases, which the young men acquire mostly during their university studies (between their twentieth and twenty-fifth years of age). For these youths, the hope of the next decade, the institute was made and the society chiefly is working.

Marriages

James Slade Rhodes, M.D., Williamston, N. C., to Miss Carrie Ernestine Alexander of Atlanta, Ga., January 8.

William Perry Northrup, M.D., New York City, to Miss Julia Radcliffe Cowing of Brooklyn, February 11.

Harold H. Theis, M.D., to Miss Augusta Steiner, both of Youngstown, Ohio, at Marietta, Ohio, January 3.

Joshua Rosett, M.D., to Miss Louise Carey, both of Baltimore, at Ronceverte, W. Va., February 6.

Thompson Coberth, M.D., The Dalles, Ore., to Miss Pearl Gibbons of Palouse, Wash., February 14.

Charles Lewis Gaulden, M.D., to Miss Branch, both of Elizabeth, La., February 9.

Deaths

Gaius J. Jones, M.D. Cleveland University of Medicine and Surgery, 1872; professor of theory and practice of medicine, and dean of the Cleveland Homeopathic Medical School; for many years local surgeon of the Lake Shore and Michigan Southern, and Erie Systems; president of the National Safe and Lock Company since 1887; formerly president of the American Institute of Homeopathy; died at his home in Cleveland, February 7, aged 70.

Horace Eugene Marion, M.D. Dartmouth Medical School, Hanover, N. H., 1869; a Fellow of the American Medical Association; a veteran of the Civil War; since 1870 a practitioner of Brighton, Mass.; formerly assistant surgeon, surgeon and medical director of the Second Brigade, Mass. V. M.; died suddenly in his automobile in Boston, February 8, from heart disease, aged 70.

Sylvester J. Wedding, M.D. University of Louisville (Ky.), 1881; a member of the Kentucky State Medical Association; for thirteen years local surgeon for the Illinois Central system at Rosine; health officer of Ohio County for four years, and for two years a member of the Hartford City Council; died at his home, February 3, from pneumonia, aged 64.

Jacob Jacques Simonson, M.D. Toledo (Ohio) Medical College, 1884; a Fellow of the American Medical Association and one of the best known practitioners of Central Wisconsin; founder and chief of staff of the Chicago, Milwaukee and St. Paul Railway Hospital, Tomah, and local surgeon for that road; died at his home, February 6, from dropsy, aged 60.

John McKelvey Gray, M.D. Medico-Chirurgical College of Philadelphia, 1893; formerly assistant at the Miners' Hospital, Fountain Springs, Pa.; and later superintendent of the Schuylkill County Alms House Hospital; died at his home in Port Carbon, February 8, three months after an operation for the removal of gall-stones, aged 41.

Robert Charles Moon, M.D. Jefferson Medical College, 1886; vice-consul in Philadelphia for Liberia; an officer of many societies for relief of the blind; son of Dr. William Moon, who invented the raised type used by the blind; an ophthalmologist of repute; died at his home in Lansdowne, Pa., February 13, from heart disease, aged 68.

Anthony F. Daugherty, M.D. University of Pennsylvania, Philadelphia, 1890; a Fellow of the American Medical Association; of Ashley, Pa.; for twenty years surgeon to Mercy Hospital, Wilkes-Barre, Pa.; died in St. Mary's Hospital, Rochester, Minn., February 6, from penumonia, two days after a surgical operation, aged 45.

John Howard Mules, M.D. Cooper Medical College, San Francisco, 1904; formerly of Reno, Nev.; secretary of the Placer County Medical Society and secretary of the Board of Health of Watsonville; died in Bellevue Hospital in that city, February 1, from acute nervous breakdown, aged 40.

Eldridge D. Flagg, M.D. Eclectic Medical Institute, Cincinnati, 1880; a member of the Kansas legislature in 1903; three times mayor of Perry, Kan., and four times a member of the local board of education; died at his home, February 12, from heart disease, aged 61.

Eben Payne Hines, M.D. Jefferson Medical College, 1874; a member of the Medical Society of the State of Pennsylvania; of Great Bend; died in the Susquehanna Hospital, January 19, two days after a surgical operation.

Adelbert L. Ritchey, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1859; for forty years a practitioner of Nashville, Tenn.; surgeon of the Tenth Illinois Volunteer Infantry during the Civil War; died at his home, January 21, from pneumonia, consequent on a street-car injury received two weeks before, aged 73.

Daniel Grove Moore, M.D. Rush Medical College, 1879; a Fellow of the American Medical Association; a veteran of the Civil War; for eight years city physician of Chicago; a member of the attending staff of St. Mary's of Nazareth Hospital; died at his home, February 17, from carcinoma of the throat, aged 70.

Sebourn McIver Jenkins, M.D. Memphis Medical College, Memphis, Tenn., 1892; a member of the Oklahoma State Medical Association, aged 40, was found dead in his office in Enid, Okla., January 31, from the effects of strychnin, believed to have been self-administered with suicidal intent, while despondent.

Maurice Andre, M.D. Washington University Medical School, St. Louis, 1866; formerly president of the Ste. Genevieve (Mo.) Medical Society; a "Forty-Niner"; until two years ago a practitioner of Ste. Genevieve, and since that time a resident of St. Louis; died in a hospital in that city, January 23, aged 79.

Jacob Henry Ludwig, M.D. Medico-Chirurgical College of Philadelphia, 1903; a member of the Medical Society of the State of Pennsylvania; of Boyerton; for two years a member of the local school board; died in the Pottstown Hospital, January 31, a week after an operation for appendicitis, aged 38.

Erasmus Darwin Burton, M.D. Western Reserve University, Cleveland, Ohio, 1846; at one time the only practitioner on the east side of Cleveland; for twenty years a trustee and member of the finance committee of the Cleveland Society for Savings; died at his home in East Cleveland, January 23, aged 88.

James D. Fulton, M.D. Tulane University, New Orleans, 1902; a member of the Louisiana State Medical Society; for a long time quarantine officer on fruit ships between New Orleans and Central America; died in the Touro Infirmary, New Orleans, January 26, from hemorrhagic pancreatitis, aged 42.

Joseph H. Davis, (license, Indiana, 1897), assistant surgeon of the *One Hundred and Forty-Fifth Indiana Volunteer Infantry* throughout the Civil War; for many years a practitioner of Azalia, but for the last nine years a resident of Seymour; died at his home, January 27, from pneumonia aged 77.

Parker J. McClure, M.D. Memphis (Tenn.) Hospital Medical College, 1893; was found dead in his home in Calvin, Okla., January 22, from the effects of a gun-shot wound of the head, believed to have been self-inflicted with suicidal intent, while despondent on account of ill-health, aged 37.

Walter Herbert Wooten, M.D. North Carolina Medical College, Charlotte; of Davidson; at one time professor of hygiene in his alma mater; a member of the Medical Society of the State of North Carolina; was shot and killed by Monroe Jetton at his house in Davidson, February 10, aged 45.

William Henry Lincoln, M.D. Rush Medical College, 1882; for twenty-five years a practitioner of Wabasha,, Minn.; and once mayor of that city; for the last year one of the proprietors of the Mondovi, Wis., Hospital; died in that institution, January 25, from cerebral hemorrhage, aged 57.

Francis Atkisson, M.D. University of Louisville, Ky., 1862; a Fellow of the American Medical Association; from 1879 to 1883 an acting assistant surgeon in the army, and since that time a practitioner of Fort Benton, Mont.; died in St. Mary's hospital in that city, February 2, aged 74.

Jacob Frick Frantz, M.D. Hahnemann Medical College, 1873; president of the Dentists' Supply Company, New York City; a director of the National City Bank and People's Bank for Savings of New Rochelle, N. Y.; died at his home in that place, February 7, from nephritis, aged 62.

William M. Dent, (license, West Virginia, years of practice, 1881). For sixty years a practitioner of Newburg; a director of the Merchants Mechanics Bank of Grafton; died in Grafton City Hospital, January 29, from septicemia, aged 83.

Francis Marion Jeffers, M.D. Hospital College of Medicine, Louisville; a member of the Indiana State Medical Association; formerly of Odell; died at his home in Attica, February 3, from nephritis, aged 56.

John A. Blackwell, M.D. Jefferson Medical College, 1859; a veteran of the Civil War, in which he served as Surgeon of the *One Hundred and Fifteenth Indiana Volunteer Infantry*; for a time a practitioner of Bedford, Ind.; died at his home in Wellsville, Mo., January 28, aged 79.

Armin Uebelacker, M.D. New York Homeopathic Medical College, New York City, 1871; for several years a member, president and treasurer of the New Jersey State Board of Medical Examiners; died at his home in Morristown, February 6, from senile gangrene, aged 83.

William H. Hanford, M.D. Cleveland University of Medicine and Surgery, 1853; for sixty years a practitioner of Williamsburg, N. Y.; one of the founders of the Eastern District Medical Dispensary; died at his home in Brooklyn, January 19, from senile debility, aged 89.

Allister MacDonald Bell, M.D. College of Physicians and Surgeons, New York City, 1904; a Fellow of the American Medical Association and professor of histology in Fordham University, New York City; died at his home in West Caldwell, N. J., January 28, aged 37.

Von Beverhout Thompson, M.D. Columbian University, Washington, D. C., 1867; a member of the Medical Society of the State of New York; for many years a practitioner of New York City; died at his home in Poughkeepsie, January 19, from heart disease, aged 67.

John Newton Babcock, M.D. University of Michigan Homeopathic Medical College, Ann Arbor, 1898; of West Bay City, Mich.; died in his room in Grand Rapids, Mich., January 27, *from the effects of cocain self-administered, it is believed,* with suicidal intent; aged 38.

Burtis Walden Green, M.D. Kansas City (Mo.) Medical College, 1901; formerly an official of the Health Department of Manila, P. I.; but for the last year connected with a mining corporation in Mexico; died January 15, in San Luis Potosi, Mexico, aged 38.

Conrad Marshall Fisher (license, Ohio, 1896); a practitioner of Rushsylvania, Ohio, for forty-five years; aged 74; was instantly killed, February 9, when the buggy in which he was crossing a railway track near Rushsylvania was struck by a passenger train.

Samuel Towers Linklater, M.D. University of Edinburgh, Scotland, 1882; a Fellow of the American Medical Association; of Hillsboro, Ore.; was struck by an electric car at Elmonica, February 7, and died a day later, in a hospital in Portland, aged 60.

William Lunsford Wilson, M.D. University of Pennsylvania, Philadelphia, 1857; one of the oldest practitioners of Nashville, Tenn.; surgeon in the Confederate service throughout the Civil War; died at his home in Nashville, January 31, from pneumonia, aged 80.

Dennis Lawrence Glynn, M.D. Baltimore Medical College, 1902; of Portland, Conn.; a Fellow of the American Medical Association; died at St. Francis' Hospital, Hartford, Conn., January 30, about six weeks after an operation for appendicitis, aged 38.

Charles E. Smith, M.D. Albany (N. Y.) Medical College, 1858; a member of the Medical Society of the State of New York; for twenty-one years postmaster of Whitesboro, N. Y.; died at his home January 27, from cerebral hemorrhage, aged 77.

Oscar Carl Schleifer, M.D. Western Pennsylvania Medical College, Pittsburgh, 1903; formerly a home missionary of the German Lutheran Society; died at his home in East End, Pittsburgh, January 31, from scarlet fever, aged 45.

William S. McBurnie, M.D. University of Louisville, Ky., 1867; for twenty-nine years a practitioner of Wichita, Kan., local surgeon for several railroads; died in a hospital in that city, January 30, from heart disease, aged 70.

John Archibald McCallum, M.D. Bellevue Hospital Medical College, 1873; a Fellow of the American Medical Association; formerly of Arkadelphia, Ark.; died at his home in Clinton, Ky., January 23, from heart disease, aged 78.

D. Clark Nipple, M.D. Medical College of Ohio, Cincinnati, 1877; a member of the Medical Society of the State of Pennsylvania; died at his home in Mt. Union, January 10, aged 61.

James Healy, M.D. Long Island College Hospital, Brooklyn, N.Y., 1861; Jefferson Medical College, 1862; died at his home in San Francisco, January 31, aged 81.

Richard Gallego Crouch, M.D. Medical College of Virginia, Richmond, 1876; a Confederate veteran; died at his home in Richmond, January 27, aged 85.

Edward P. Chase, M.D. University Medical College, Kansas City, Mo., 1894; of Shawnee, Kan.; a member of the Kansas Medical Society; died in St. Joseph's Hospital, Kansas City, Mo., February 5, from pneumonia, aged 43.

Lee Verne Howard, M.D. Denver and Gross College of Medicine, Denver, Colo., 1904; a member of the Colorado State Medical Society; died at his home in Los Angeles, Cal., January 12, from cerebral hemorrhage, aged 33.

Ferdinand Christoph Gores, M.D. Miami Medical College, Cincinnati, 1879; for thirty-seven years a teacher of German in the Woodward High School, Cincinnati; died at his home in that city, January 25, aged 71.

Llewellyn B. Staley, M.D. Cincinnati College of Medicine and Surgery, 1881; a member of the Indiana State Medical Association; a veteran of the Civil War; died at his home in Bicknell, January 28, aged 69.

George Ephraim Fuller, M.D. Georgetown University, Washington, D. C., 1865; a Fellow of the American Medical Association; died at his home in Monson, Mass., Dec. 23, 1913, aged 69.

Warren Byers Watkins, M.D. Bellevue Hospital Medical College, New York City, 1897; formerly of Opelika, Ala., but later a banker of Oklahoma City; died February 1, from erysipelas, aged 46.

Edward Gardiner Day, M.D. College of Physicians and Surgeons, New York City, 1889; of New York City; died in the Presbyterian Hospital, New York City, February 5, aged 70.

Charles C. Ranes, M.D. Barnes Medical College, St. Louis, 1910; of Basco, Illinois; died at the home of his brother in Urbana, Ill., February 2, from typhoid fever, aged 32.

Reu Orman Ross, M.D. American Medical Missionary College, Chicago, 1900; a Fellow of the American Medical Association; died at his home in Fresno, Cal., February 7, aged 42.

John Roth, M.D. Baltimore University, 1894; for twenty-three years a member of the police force of Baltimore; died at his home in East Baltimore, January 30, aged 62.

Frederick Scheuermann, M.D. Chicago Homeopathic Medical College, 1879; a member of the Illinois State Medical Society; died at his home in Chicago, January 17, aged 62.

Joseph P. Lamb, M.D. Bellevue Hospital Medical College, 1867; for three years city physician of Poughkeepsie, N. Y.; died at his home in the Bronx, New York City, January 18.

Theodore E. Butler, M.D. Kentucky School of Medicine, Louisville, 1876; of Ballinger, Tex.; died at the home of his son in Temple, Tex., January 25, aged 61.

Charles True, M.D. Rush Medical College, 1866; a veteran of the Civil War; died at his home in Kankakee, Ill., January 30, from cerebral hemorrhage, aged 70.

Walter Ardiel, M.D. Western University, London, Ont., 1897; died at his home in Grand Rapids, Mich., January 29, from disease of the liver, aged 43.

William David Hinchey, M.D. Medical College of Ohio, Cincinnati, 1875; died at his home in St. Louis, January 27, from chronic bronchitis, aged 61.

Horace T. Holden, M.D. Chicago Homeopathic Medical College, 1897; died at his home in Omaha, January 21, from sarcoma of the lungs, aged 43.

David A. Hatt, M.D. Detroit College of Medicine, 1887; of Onaway, Mich.; died at his home, January 26, from pneumonia, aged 62.

Charles Francis Sherman, M.D. Boston University School of Medicine, 1877; died at his home in Holland, Mich., January 13, aged 59.

James Albert Cox, M.D. Long Island College Hospital Brooklyn, N. Y., 1891; died at his home in New York City, February 3, aged 55.

Garwood Harvey Attwood, M.D. Yale University, New Haven, Conn., 1844; died at his home in Waterbury, Conn., February 1, aged 95.

Luther K. Stine, M.D. University of Pennsylvania, Philadelphia, 1860; died at his home in Philadelphia, January 23, aged 77.

Louis G. Belisle, Laval University, Montreal, 1908; was found dead in his home in West Rutland, Vt., January 16, aged 29.

John Ridley Nott, L.R.C.P. and S., Edinburgh, 1887; died at his home in Lakeport, Cal., about February 1.

Joseph Barranco, M.D. University of Palermo, Sicily, 1891; of Baltimore; died in Italy, Dec. 7, 1913.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

SOME MORE FRAUDULENT OBESITY CURES*

Every Woman's Flesh Reducer

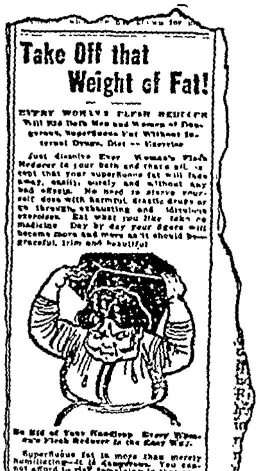
"Every Woman's Flesh Reducer" is sold by the Every Woman Company, Chicago, Ill. It is a white powder, smelling strongly of camphor and comes in a violet-colored tin box. It is an "obesity cure" of the bath-powder type and the directions are to dissolve 5 tablespoonfuls of the powder in an ordinary hot bath.

> "Lie in bath ten minutes each night before retiring. Within one week you will commence to notice the reduction."

Like every other obesity cure, the use of "Every Woman's Flesh Reducer" is said to obviate the necessity of exercising or dieting for reducing weight. For instance.

> "Every Woman's Flesh Reducer will rid both men and women of dangerous, superfluous fat without internal drugs, dieting or exercise."
>
> "Just dissolve Every Woman's Flesh Reducer in your bath and that's all, except that your superfluous fat will fade away . . ."
>
> "No need of starving yourself. . . ."
>
> "Eat what you like. . . ."
>
> "Every Woman's Flesh Reducer will quickly and naturally relieve you of all abnormal fat."

All this, and much more, nonsense to the same effect! An original package of the stuff was purchased and submitted to the Association's laboratory for analysis. The chemists reported:



Take Off that Weight of Fat!

Be Rid of Your Handicap. Every Woman's Flesh Reducer is the Easy Way.

"The box contained 520 gm. (less than 1¼ pounds) of a white, somewhat 'cakey' powder, having an odor of camphor. On treating some of the powder with water, an evolution of carbon dioxid took place, leaving, when the reaction had ceased, a flocculent precipitate, soluble only on addition of acids. Qualitative examination indicated the presence of the following constituents: aluminum, magnesium, potassium, sodium, carbonate, citrate, sulphate and camphor.

"From a qualitative examination, supplemented by an estimation of the magnesium, aluminum, sulphate and water content, the powder was found to be a mixture of ordinary alum (crystallized potassium aluminum sulphate), about 22 per cent., Epsom salt (crystallized magnesium sulphate) about 34 per cent. with an effervescing base consisting of citric acid and sodium bicarbonate (or possibly sodium carbonate) and small amounts of camphor."

From these findings it is evident that "Every Woman's Flesh Reducer" consists, essentially, of:

Epsom salts
Camphor
Alum
Soda
Citric Acid

The soda and citric acid are apparently put in for the purpose of producing an effervescence when the stuff is dissolved in water. This is probably for psychic effect. That taking a hot bath daily and staying in it for some length of time may reduce weight is doubtless true, though the indiscriminate use of such a method is not to be commended. That putting small quantities of Epsom salt, alum and camphor into the tub would have any effect in the reduction is certainly not true. Like every other bath powder sold as a "cure" for obesity, "Every Woman's Flesh Reducer" is a fraud.

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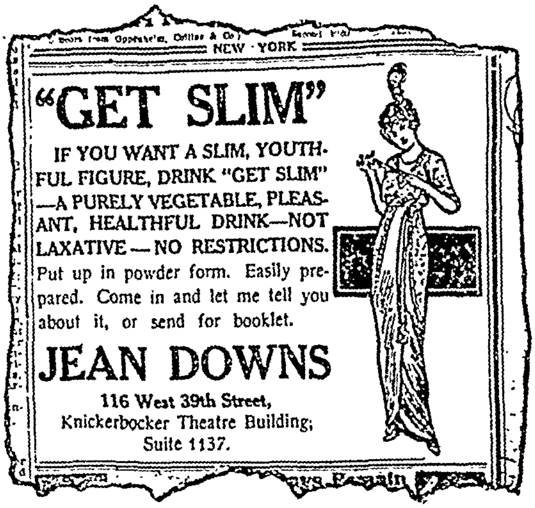
* These will be incorporated, with others that have already appeared, in the pamphlet "Obesity Cure Fakes," price 10 cents.

"Get Slim"

Jean Downs of New York City offers to remove "a little lump of fat on the back of the neck" or "knobs on the hips below the corset" and in other ways reduce the obese to a condition of delightful slimness. It is all done with "Get Slim," which is "not a medicine, but a drink—a purely vegetable, pleasant, healthy drink." Most simple, is it not? "Get Slim" comes in powder form; "it is not laxative" and of course "there is no special dieting." All that is necessary is to dissolve "Get Slim" in water "and drink it, when thirsty, instead of water."



NEW · YORK

"GET SLIM"

IF YOU WANT A SLIM, YOUTHFUL FIGURE, DRINK "GET SLIM" —A PURELY VEGETABLE, PLEASANT, HEALTHFUL DRINK—NOT LAXATIVE — NO RESTRICTIONS. Put up in powder form. Easily prepared. Come in and let me tell you about it, or send for booklet.

JEAN DOWNS
116 West 39th Street,
Knickerbocker Theatre Building;
Suite 1137.

What "Get Slim" will do is told in testimonials sent out by Jean Downs. Most of these testimonials are from women, and in every case either the name or the address is lacking. One, however, purports to come from a physician, E. P. Robinson, M.D., 1402 Broadway, New York City. Dr. Robinson is most enthusiastic about "Get Slim," and declares that he is "acquainted with the ingredients entering into its manufacture."

"Get Slim" is sold at $1 a box. A box contains fifteen large envelopes, the same number of smaller envelopes and a package of powder. The larger envelopes contain a pink powder; the smaller envelopes also contain a pink powder. The powder in the third package is white. The contents of the various packages were analyzed in the Association's laboratory and the chemists' report follows:

"An original sealed package of 'Get Slim,' Jean Downs, New York, was received at the Association's Chemical Laboratory for examination. The trade package contained three separate smaller packages as follows: (1) The larger package consisted of 15 envelopes each containing 10 gm. (150 grains) of a pink powder which responded to tests for ordinary sugar (sucrose). No other constituents were found. It is therefore concluded that these powders consist essentially of sugar tinted pink. (2) Package number two was composed of 15 smaller envelopes each enclosing about 3 gm. (45 grains) of a pink powder. This powder responded to tests for ordinary tartaric acid. With the exception of a trace of red color no other constituents were found. It is therefore concluded that these powders consist essentially of tartaric acid. (3) The third package contained 115 gm. of a white powder which responded to tests for sodium bicarbonate. No other constituents were found."

Summed up then the chemists' report shows that "Get Slim" consists essentially of:

Sugar, colored pink
Tartaric acid, colored pink
Baking soda

The directions call for mixing the pink sugar with the pink tartaric acid in a quart of water and adding the juice of one lemon. The baking soda is to be dissolved in a quart of hot water and a teaspoonful of the mixture taken three times a day before meals. The approximate cost of the ingredients in a $1 box of "Get Slim" is 7 cents.

In addition to "Get Slim" Jean Downs also sells a "Bath Mixture" as "a great aid to reduction"; a "Bleaching Cream" which it is said "removes all freckles and discolorations after a very short time"; and a "Nourishing Cream" which we are asked to believe is "a perfect skin food," that "removes and prevents lines."

The "Get Slim" obesity cure is but a modification of the old-fashioned pink lemonade that used to be sold at the circus before pure food laws interfered with this profitable swindle. It was usual, as will be remembered, to cut up one lemon and float it on top of the barrel. The psychic effect was valuable to the dispensers.

Whatever reduction in weight may be brought about by "Get Slim" is due to the interference with digestion by the use of this synthetic lemonade.

PAM-ALA, ANOTHER WORTHLESS QUININ SUBSTITUTE

Report of the Council on Pharmacy and Chemistry

The following report of a referee on Pam-ala, an asserted malaria specific, was adopted by the Council and its publication authorized.

W. A. PUCKNER, Secretary.

Soon after publication of the Council's report on Sinkina, an alleged malaria specific proved worthless, the referee's attention was called to Pam-ala, which is sold under very similar claims.

According to the advertisements which have been appearing in Southern medical journals, Pam-ala is "A new and effective remedy for MALARIA."

The label describes Pam-ala as "An Effective Vegetable Remedy For MALARIA. Guaranteed free of any Quinine, or other harmful [*sic*] drugs." It is said to be indicated in "Malarial Intermittent and Remittent Fevers, especially curative in Chronic Malaria and Malarial Cachexia and all conditions even where Quinine fails." One tablespoonful three times a day is said to be the "Curative Dose," while one tablespoonful three times a week is stated to be a "Prophylactic Dose." The label further claims that Pam-ala "Surpasses Quinine in its action and has none of its Disadvantages." Assertions that Pam-ala is superior to quinin are followed by the usual "guarantee" claim: "Guaranteed by the Pam-Ala Co. under the Drugs Act, June, 1906, Ser. No. 2909 A." Finally, the label says that it is "Endorsed by Medical Authorities Throughout the world."

As regards the composition, a circular says that "PAM-ALA is a purely vegetable remedy for the cure, without Quinine, of all forms of Malaria." "'PAM-ALA' is derived from a plant of the genus Umbelliferae, a native of the mountainous regions of Mexico and northern parts of South America. Its medicinal properties have not been known to anyone but the native Indians, who for years past have used it as a specific in all forms of fever and malarial diseases so prevalent in tropical countries. The seeds are more active as a therapeutic agent than the dried-up plant; hence their collection for medicinal purposes requires special skill in the selection of the same so as to be able to extract all the possible medicinal properties from them, viz:, its active principle. An oil may be abstracted from the seeds which is of a yellow color with an intense characteristic odor."

At the close of the circular the following unenlightening formula appears:

Each fluid ounce contains:

Ext. Fld. Pam-ala	10 per cent.
Alcohol	15 per cent.
Ol. Aurant Syr. Sacchari aqua ad. q. s.	100 per cent.

In addition to being a cure for malaria, Pam-ala is claimed to have a "favorable influence upon the broncho-pneumonia of measles . . . ," "will avert an attack of acute catarrh," and "abort acute tonsilitis."

The testimonials are of the usual character. Most of them seem to have been given some four years ago by physicians in Italy, Cuba, Porto Rico, Guatemala, etc., and therefore cannot readily be looked into. Two are of more recent date and come from physicians in this country. They furnish good illustrations of the manner in which proprietary concerns make use of opinions hastily formed and thoughtlessly put in writing. One testimonial was given in July, 1912:

> "I take pleasure in testifying to the seemingly marvelous and gratifying effect of Pam-ala in 2 cases of malaria. . . ."

On Jan. 2, 1914, its writer, in reply to an inquiry whether in the light of continued experience, his first estimate of Pam-ala had been confirmed, wrote:

> ". . . Since then I tried Pam-ala on a number of cases without any results whatever; in fact my patients seemed to get worse until I resorted to the usual treatment of malaria, mercurial laxative followed with quinin. I was too hasty in stating that Pam-ala cured malaria. I now know and have known since August, 1912, that Pam-ala will not cure malaria. . . ."

The writer of the second testimonial is reported to have written that he tried Pam-ala "on a most pronounced case of malarial spleen with the most excellent results" and that he "also tried Pam-ala on a case of Malarial Cystitis and Hematuria, with entire satisfaction." In reply to inquiry this physician admits that he was "very favorably impressed with the preparation at the time." He states that at that time he was also trying out Sinkina and that after six months he "discontinued the use of both as the results did not warrant further investigation." He concludes:

> "With due allowance for the fact that certain cases will for a time improve on any kind of treatment, new or old, I see no reason for supplanting or even augmenting, the recognized treatment for malarial conditions, with either Pam-ala or Sinkina."

Incidentally it should be mentioned that this physician also noted the general similarity of Sinkina and Pam-ala. He observes:

> "The physical appearance and properties of the two preparations seem to be identical, the advertising matter and literature are surprisingly alike and the only marked difference seems to be that one remedy is purported to be prepared from a 'new' South American plant and the other from an equally fresh discovered addition to Asiatic flora."

WHAT IS PAM-ALA?

From a comparison of the statements regarding the composition which are made for Sinkina and for Pam-ala, as well as from the physical characteristics of the preparation, particularly the odor and taste, it seems evident that the essential constituent is oil of *cumin*. Although definite proof that oil of *cumin* forms the essential constituent of Pam-ala would have shown the worthlessness of this nostrum for the reason that the clinical investigation of Sinkina proved the worthlessness of oil of *cumin*, it did not seem worth while to the referee that this be demonstrated by chemical analysis. It seemed to him that in such cases as these, the secrecy with which the identity of the preparation is surrounded, as well as the extravagant and highly improbable claims, should be sufficient to condemn it.

QUACKS RETALIATE

An Attempt to Manufacture Evidence Against Reputable Physicians

When the Chicago *Tribune* published its series of exposures on the "men's specialists" frauds of that city, the quacks attempted to start a "back-fire" against the flame of public indignation that was aroused by the *Tribune's* exposures. Efforts were made to "put up a job" on reputable physicians and surgeons. The thing proved a fiasco.

An effort is now being made, apparently, to accumulate trumped-up evidence against decent physicians in other cities. The letter which follows was addressed to an advertising quack. The letter-head of the stationery reads: "The Accuracy Public Service Co., Expert Secret Service." The latest Chicago telephone directory does not contain the name of any such company; neither does the Chicago city directory. Here is the letter:

Feb. 13, 1914.

Dear Sir:—By request of Drs. Hodgens, Ross and Dupuis of Chicago, Drs. Allison, Hughes and Lloyd of St. Louis, Mo., Dr. Thies of Springfield, Ill., and our own personal knowledge we wish to inform you that there is an investigation on foot against the advertising doctors of your city, and that you will become involved in legal difficulties which are identical with those that the doctors of Chicago and St. Louis have been subjected to.

We have rendered services in this connection which have been most satisfactory to our clients in both cities. We have just returned from a very successful campaign in St. Louis, Mo., where we were engaged by Doctors Allison, Hughes, Lloyd and many others in the crusade which was waged against the advertising doctors of that city, and we beg to say that our work of securing the evidence against the ethical members of the Medical Association was a complete success. The evidence procured is of inestimable value to our clients and brought the bitterly fought war to a sudden end, leaving the doctors alone and unmolested.

We take the liberty of offering you our services, assuring you that if you avail yourself of them, we will accomplish the same results for you, as we are specialists in "Getting the Goods," and believe in the old adage "An ounce of prevention is worth a pound of cure." Why not unite to drive out the pernicious and utterly un-American system of the so-called ethical members of the medical fraternity?

We would be pleased to arrange for a personal interview if you so desire.

Respectfully,
The Accuracy Public Service Co.,
Per A. C. Weis, Mgr.

RADIUM EXPLOITATION

The recent wide-spread attention given to radium has marked an exploitation comparable in many ways to that characterizing previous medical discoveries—some of which have succeeded, others failed. In many instances newspaper comments bear the earmarks of being prompted by interested parties, are usually extravagant, often ludicrous and generally serve to bring into discredit things which are perhaps deserving of a better fate. An evening paper of Milwaukee says:

> "Dr. ———, who is to be head of a corporation composed of Milwaukeeans, has ordered $100,000 worth of radium from various parts of Europe, which will be used to cure cancer and in research work. An institute will be established for these purposes. The amount ordered is 250 mg., which is one-eighth of all the radium in the world. It is expected that the shipment will arrive about May 15. Dr. ——— has become familiar with the treatment of disease with radium through ten trips to Europe."

It may be unnecessary to state that it is impossible to estimate the amount of radium in the world; that present conditions point to the fact that there is at least one hundred times as much as the report mentions, and finally that $30,000 would represent more exactly a fair price for the quantity ordered.

The Sanitary Significance of the Body-Cells in Milk.—It is entirely possible that some of the striking variations in numbers have a sanitary significance, as pathologic conditions would certainly affect the discharge of these body-cells. It seems probable, however, that the change produced by pathologic conditions may not always be an increase in numbers of cells. Pathologic disturbances in the blood are indicated just as surely by a decrease in numbers of red or white cells as by the reverse condition. Inasmuch as we have but very few data as yet on which to base conclusions, it is impossible to make even a guess as to the final conclusions regarding the significance of the variations in number and character of the cells. The cells certainly do not have the significance of pus-cells under ordinary conditions, nor does it seem probable that it will be possible to recognize the admixture of pathologic with normal milk by means of these cells alone. With our present knowledge, it is certainly impossible to make this distinction.—Robert S. Breed, *Jour. Infect. Dis.*

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CREOSOTE IN PRESCRIPTION

To the Editor:—On page 180 of the "Handbook of Therapy," third edition, appears the following prescription:

℞ Creosoti (beechwood, the best) .... gtt. vi
Glycerini .... f℥ i
Spiritus frumenti .... f℥ ii

M. et sig.: A dessertspoonful every two, three or four hours, diluted with a little water.

1. Is this prescription meant to be a 2- or a 3-ounce mixture?

2. Is the amount of creosote correct as given in the prescription? The dose seems so small that little benefit could be expected from it. A. E. CONTER, M.D., Chattahoochee, Fla.

ANSWER.—1. The prescription is intended for a 3-ounce mixture, which would furnish twelve doses, each dose containing ½ drop of creosote.

2. Yes. It is always wise to begin the treatment of tuberculosis with creosote with small doses. In this case the patient would receive from 2 to 3 drops in twenty-four hours. After the first prescription is finished, the next should, according to the advice of those who believe in the creosote treatment of tuberculosis, contain double this quantity of creosote, namely, 12 drops to the mixture. The creosote should then gradually be increased to the point of tolerance, which means that there is some indigestion, the appetite is lost, or perhaps some intestinal disturbance may occur. The dose is then reduced to the amount that the patient well tolerates, and is then best given directly after meals, three times a day. The larger doses must always be very well diluted. Also, when larger doses are administered, the urine should be frequently examined for albumin, or for signs of phenol poisoning, and if the kidneys are at all disturbed or the urine is abnormal, the creosote should be stopped.

The prescription given in the "Handbook of Therapy" is intended to represent a method in which creosote is frequently given by clinicians who believe the combination to be of special value. Ordinarily it would be better to substitute for the spiritus frumenti some non-alcoholic menstruum, such as plain water or peppermint-water.

STERILIZATION OF TOBACCO

To the Editor:—I am doing some research work with tuberculosis and tobacco. Would you kindly give me a little important information? Will a temperature of 120 in the autoclave for five minutes destroy or materially change the essential substances in tobacco? I wish to sterilize the tobacco, and then make an infusion. I also wish to make an infusion and sterilize it for experimentation with tuberculosis. L. S. OPPENHEIMER, M.D., Tampa, Fla.

ANSWER.—There are so many substances in tobacco that it would be an endless task to investigate in the literature to learn whether or not each and all would be decomposed or altered at 120. Nicotin, the chief base, occurring to the extent of from 0.6 to 9 per cent., depending on the variety of tobacco, is rather stable and probably would not be altered by heating at 120. In extracting nicotin, the tobacco is treated with steam, and as this does not decompose the nicotin it is not likely that a few degrees higher would produce much change.

ARTICLES ON SCARLET FEVER

To the Editor:—Please refer me to English articles of importance on the subject of scarlet fever published within the last eighteen months. ESTHER MITCHELL, M.D., Monmouth, Ill.

ANSWER.—The following is a list of references on this subject:

Inclusion Bodies in Scarlet Fever, editorial, THE JOURNAL, March 8, 1913, p. 750.

Fishbein, M.: Functional Test (Phenolsulphonephthalein) of the Kidney in Scarlet Fever, THE JOURNAL, Oct. 11, 1913, p. 1368.

Serotherapy of Scarlet Fever, Queries and Minor Notes, THE JOURNAL, Jan. 24, 1914, p. 315.

Granger, J., and Pole, C. K.: Inclusion Bodies in Scarlet Fever, *Brit. Jour. Child. Dis.*, January, 1913; abstr., THE JOURNAL, Feb. 8, 1913, p. 479.

Porak, R.: Pulmonary Complications of Scarlet Fever, *Bull. Soc. de pédiat. de Paris*, 1912, xiv, No. 9; abstr., THE JOURNAL, Feb. 22, 1913, p. 631.

Miry, H., and Others: Scarlatinal Uremia with Blindness, *Bull. Soc. de pédiat. de Paris*, 1912, xiv, No. 9; abstr., THE JOURNAL, Feb. 22, 1913, p. 631..

Mead, F. H.: Scarlet Fever; Is Desquamatory Stage Contagious? *Med. Rec.*, New York, Feb. 15, 1913; abstr., THE JOURNAL, March 1, 1913, p. 690.

Lind, L. C.: Factors Concerned in Spread of Scarlet Fever, *Cleveland Med. Jour.*, February, 1913; abstr., THE JOURNAL, March 22, 1913, p. 941.

Draper, G., and Hanford, J. M.: Experiments on Transmission of Scarlet Fever to Monkeys, *Jour. Exper. Med.*, May, 1913; abstr., THE JOURNAL, May 17, 1913.

Elgart, J.: Eucalyptus Oil in Scarlet Fever, *Med. Klin.*, Aug. 3, 1913; abstr., THE JOURNAL, Sept. 13, 1913, p. 906.

Kretschmer, M.: Etiology of Scarlet Fever, *Jahrb. f. Kinderh.*, September, 1913; abstr., THE JOURNAL, Oct. 18, 1913, p. 1496.

Szontagh, F. von: Angina and Scarlet Fever, *Jahrb. f. Kinderh.*, December, 1912; abstr., THE JOURNAL, Feb. 1, 1913, p. 406.

Fischer, L.: Treatment of Scarlet Fever with Intravenous Injections of Neosalvarsan, *Arch. Pediat.*, May, 1913; abstr., THE JOURNAL, July 12, 1913, p. 143.

Gerstley, R.: Diet in Scarlet Fever, *Monatschr. f. Kinderh.*, 1913, xii, No. 3; abstr., THE JOURNAL, Aug. 16, 1913, p. 520.

Manasse, P.: Scarlet Fever and the Ear, *Monatschr. f. Kinderh.*, 1913, xii, No. 3; abstr., THE JOURNAL, July 19, 1913, p. 230.

DISINFECTION OF THE HANDS

To the Editor:—1. What effect does prolonged scrubbing with soap and running water have as regards freeing the hands from the danger of carrying infection?

2. Are hands prepared thus and subsequently soaked for five minutes in alcohol safe for ordinary surgical procedures?

RAY ERNEST SMITH, M.D., Rutland, Vt.

ANSWER.—Prolonged scrubbing removes the external layers of the epidermis and some of the bacteria. There is a difference between practical results and technical laboratory results. Practical results show that proper washing with soap and water followed by scrubbing, not simply soaking, with from 70 to 80 per cent. alcohol gives clean hands, and that if this process be thoroughly followed no cultures will be made from surface contact, or in other words, from the surface of the hands; but if bits of skin be cut off from the hands so as to include the depth of the follicles, germs may be found which have been hidden in the depths of the follicles.

2. The reason that it is not desirable to operate with bare hands thus prepared is that the hands perspire and the use of the hands in handling instruments and tissues brings germs to the surface and thus makes it possible to infect the wound. While practical experience shows that the danger is very slight, yet the possibility of it makes it desirable not to operate without wearing properly sterilized gloves.

Notwithstanding the fact that experiments show that alcohol is not a germicide, practical results show that its proper use cleanses the hands better than any other method in use to-day. The trouble is that most surgeons have either had a little alcohol poured over the hands or dip the hands into the alcohol, both methods being useless. The hands must be scrubbed in order to be cleaned successfully.

REPAIR OF CERVICAL LACERATIONS—TREATMENT OF PARALYSIS AFTER POLIOMYELITIS

To the Editor:—1. Please give the most recent ideas concerning the treatment of lacerations of the cervix uteri during childbirth. Is immediate repair advocated by good authority, and if so, by whom?

2. What, in addition to persistent massage, is considered good treatment for a case of paralysis of the lower limbs and a consequent indisposition to walk, following an attack of poliomyelitis in a child 2½ years old?

H. TROSSBACH, M.D., Colorado Springs, Colo.

ANSWER.—1. Slight radial or longitudinal lacerations of the cervix occur in nearly all labors. They are not important and no authority recommends that they be searched for and repaired. More extensive tears, extending up to the vaginal fornix or even into the supravaginal portion of the cervix, rarely occur in spontaneous labors, but result frequently from operative deliveries and especially when operations are made before dilatation of the cervix. They generally cause considerable hemorrhage, which is sometimes dangerous. In these cases the hemorrhage is an indication for repair, which is advised by practically all authors. In case of operative delivery, even when there is no considerable hemorrhage, an examination to determine the condition of the cervix is desirable, either digital or by aid of retractors, and when a laceration is found it should be repaired. Extensive spontaneous lacerations are not common, and it is not advised to make a routine examination immediately after labor for the purpose of finding them when there is no hemorrhage. Hirst of Philadelphia examines all patients from the fifth to the seventh day of the puerperium to discover cervical and vaginal lacerations, and makes at that time the "intermediate" repair. Most authors recommend an examination at the end of two weeks or later, when a bad laceration can be repaired or arrangements made for a later operation.

2. A cautious use of electricity may be made, beginning after the acute stage has passed. Massage may also be employed but should not be overdone. Care should be taken to correct faulty positions of the limbs so that deformities may not occur. Muscle education is an aid in restoring lost functions. The most important surgical measures to be considered are proper braces, tendon shortening, arthrodesis in certain cases, suspension by silk tendons, tendon transplantation and nerve transplantation.

Reference may be made to the following recent articles:

Ryerson, E. W.: The Surgery of Infantile Paralysis, The Journal, Nov. 1, 1913, p. 1614.
Frauenthal, H. W.: The Treatment of Paralysis of Anterior Poliomyelitis, The Journal, Dec. 20, 1913, p. 2219.

ARTICLES ON PNEUMOCOCCUS VACCINE THERAPY

To the Editor:—I am preparing a paper on pneumococcus vaccine therapy, to be read before our local medical society sometime in the near future. May I ask you to send me a complete bibliography on this subject? Peter Potter, M.D., Butte, Mont.

Answer.—Following is a list of references to this subject:

Rosenow and Hektoen: Treatment of Pneumonia with Partially Autolyzed Pneumococci, The Journal, Dec. 20, 1913, p. 2203.
Rosenow, E. C.: Autolysis of Pneumococci and the Effect of the Injection of Autolyzed Pneumococci, The Journal, Sept. 7, 1912, p. 795.
Charteris, F.: Treatment of Pneumonia by Polyvalent Stock Pneumococcic Vaccine, *Glasgow Med. Jour.*, January, 1912; abstr., The Journal, Feb. 3, 1912, p. 376.
Robertson, W. E., and Illman, G. M.: Value of Bacterins in Pneumonia, *Pennsylvania Med. Jour.*, January, 1912; abstr., The Journal, Feb. 10, 1912, p. 347.
Jones, G. P.: Two Cases of Pneumonia Treated with Pneumococcus Vaccine, *Lancet*, London, March 2, 1912.
Raw, N.: Value of Pneumococcus Vaccine in Treatment of Pneumonia, *Lancet*, London, March 9, 1912.
Rosenow, E. C.: Immunity in and Specific Treatment of Pneumonia, *Illinois Med. Jour.*, April, 1912; abstr., The Journal, May 18, 1912, p. 1542.
Vaccine and Serum Treatment of Pneumonia, Queries and Minor Notes, The Journal, June 8, 1912, p. 1773.
Bispham, W. N.: Series of Cases of Pneumonia Treated by Vaccines, *Mil. Surgeon*, June, 1913; abstr., The Journal, July 19, 1913, p. 223.
Hirschfelder, J. O.: Production of Active and Passive Immunity to the Pneumococcus with a Soluble Vaccine, The Journal, Oct. 12, 1912, p. 1373.
Vaccine Treatment of Pneumococcic Affections, Queries and Minor Notes, The Journal, Oct. 11, 1913, p. 1393.

BAD FOR THE TEETH AND THE PHARMACIST

To the Editor:—The following is taken from the ———— for December, 1913:

TEETH DISCOLORED BY IRON

Combe recommends rubbing the teeth lightly, each day once, with a stick that has been covered with cotton and dipped in the following solution:

℞ Acidi hydrochlorici fumantis
Aquae destillatae, āā .... 5 c.c.
M. et ft. solutio.
Following this, for fifteen days use this powder:
℞ Potassii chloratis .... 5 gm.
Cretae preparatae .... 10 gm.
Pulveris iridis florentini .... 20 gm.
M. et ft. pulv.

1. Is this a good way to clean teeth? 2. Or should the editor of the ——— be required to triturate violently a goodly quantity of potassium chlorate with suitable organic matter? S. W. W.

Answer.—1. No. The use of strong hydrochloric acid even when diluted with an equal quantity of water would be injurious to the enamel of the teeth.

2. Without doubt the editor referred to is aware of the danger of triturating organic matter and potassium chlorate together. Every pharmacist of course knows this and every physician ought to know it.

SIGNS IN TUBERCULOSIS AND MENINGITIS

To the Editor:—Please give the method of eliciting the following signs and their value in diagnosis: 1. Pottenger's sign in tuberculosis; (2) MacEwen's sign in epidemic cerebrospinal meningitis, and (3) Brudzinski's sign in epidemic cerebrospinal meningitis. O. F. Scott, M.D., Argo, Ill.

Answer.—1. The term "Pottenger's sign" is applied to two methods: (*a*) Intercostal muscle rigidity on palpation in pulmonary and pleural inflammatory conditions, and (*b*) different degrees of resistance on light touch palpation, noted (1) over solid organs when compared with hollow organs, and (2) over foci of disease in the lungs and pleura when compared with that over normal organs. The value of this sign is not yet determined.

2. In percussion of the skull behind the junction of the frontal, temporal and parietal bones, there is a more resonant note than normal in internal hydrocephalus and cerebral abscess. It is not a constant sign, nor one easily obtained in meningitis.

3. A. In meningitis, when the neck of the patient is bent, flexure movements of the ankle, knee and hip are produced. B. In meningitis, when passive flexion of the lower limb on one side is made, a similar movement will be seen in the opposite limb; called also contralateral reflex.—American Illustrated Medical Dictionary.

RELATION OF RICKETS TO DENTITION

To the Editor:—1. Please give a list of references on the relation of rickets to dentition in infancy and early childhood.

2. Is there a good therapeutic treatise on oral and dental hygiene during the first years? James Wendel Rosenfeld, M.D., Portland, Ore.

Answer.—1. The following may be referred to:

Marshall, J. S.: Mouth Hygiene and Mouth Sepsis, Philadelphia, J. B. Lippincott Company, 1912, $1.50.
Hunter: Oral Sepsis, Chicago Medical Book Company, $1.
Barton, J. K.: Nutrition, Rickets and Dental Defects, *Brit. Dent. Jour.*, 1903, xxiv, 265.
Labbey, G.: Contribution à l'étude des retards de la première dentition chez les rachitiques, Paris, 1904.
Abt, I. A., and Frank, M.: Rachitic Erosions of the Permanent Teeth Associated with Lamellar Cataract, The Journal, Oct. 3, 1908, p. 1130.
Helbich, H.: Defective Development of Teeth in Relation to Rachitis and Spasmophilia, *Arch. f. Kinderh.*, 1913, lx-lxi (A. Baginsky Festschrift).

2. We do not know of any special treatise on the subject.

WORKS ON HYPNOTISM

To the Editor:—If there is anything of value in hypnotism, please tell me of a good work on the subject. James Farrage, M.D., Deering, N. Dak.

Answer.—Following is a list of references on the subject of hypnotism:

Moll: Hypnotism, New York, Scribner's Sons Company.
Hilger, W.: Hypnosis and Suggestion, New York, Rebman Company.
Miller, H. C.: Hypnotism and Disease, Boston, Richard G. Badger, 1912.
Bramwell: Hypnotism and Treatment by Suggestion, New York, Funk and Wagnalls.
DeCourmellas: Hypnotism, New York, G. Routledge & Sons.
Forel: Hypnotism, New York, Rebman Company.
Mason: Hypnotism and Suggestion, New York, Henry Holt & Co.
Wetterstrand: Hypnotism, New York, G. P. Putnam's Sons.

BOOKS ON OCCUPATIONAL DISEASES

To the Editor:—The article on braziers' disease, by Charles A. Pfender, The Journal, Jan. 24, 1914, p. 296, leads me to inquire of you as to some publication that covers the subject of occupational diseases. F. V. Gammage, M.D., Columbus, Ohio.

Answer.—Following is a list of books dealing with this subject as a whole:

Oliver: Dangerous Trades, New York, E. P. Dutton, $8.
Oliver: Diseases of Occupation, New York, E. P. Dutton, $3.
Greer, W. J.: Industrial Diseases and Accidents, Bristol, J. W. Arrowsmith, 1909, 339 pages.
Rambousek, J.: Industrial Poisoning, New York, Longmans, Green & Co., 1913, 360 pages, $3.50 net.

STETHOPHONE, NOT STETHOSCOPE?

To the Editor:—Mails are slow in these parts in winter, and so I did not see, until to-day, the communication of Kollege Barach on the "Stethophone, Not Stethoscope" (The Journal, Feb. 14, 1914, p. 553). I think I know Barach, and I know A. Rose; but who in Hades is or are Thomas Nelson & Sons, New York, and why should their opinion on a matter of medical terminology be better than that of any one else? Hasn't "our Editor" all the dictionaries and lexicons necessary? Laennec was something of a Greek expert, and he at first thought his "so simple instrument" did not need a special name; but having heard several, "some of them barbarous and all improper," he decided on the name "stethoscope" as most appropriate, indicating the "exploration," and not looking for other meanings that might frighten "smug conventionality." For almost a century the term has been used without disadvantage. Why enlarge the dictionaries by replacing it by a Pittsburgh-New York innovation?

Yours for accuracy,
Tobias Stringfellow, *Pikeville, Pike Co., Mo.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7. Sec., Dr. John Wix Thomas, Phoenix.

COLORADO: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, March 10. Sec., Dr. Charles A. Tuttle, New Haven. Homeopathic: New Haven, March 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Eclectic: New Haven, March 10. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

IDAHO: Wallace, April 7. Sec., Dr. John F. Schmershall, Jerome.

MAINE: Portland, March 10-11. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, March 10-12. Sec., Dr. Walter P. Bowers, *Room 159, State House, Boston.*

MINNESOTA: Minneapolis, April 7-10. Sec., Dr. Thomas McDavitt, 814 Lowry Bldg., St. Paul.

MONTANA: Helena, April 7. Sec., Dr. Wm. C. Riddell, Helena.

RHODE ISLAND: Providence, April 2. Sec., Dr. Gardner T. Swarts, Room 315, State House, Providence.

UTAH: Salt Lake City, April 6-7. Sec., Dr. G. F. Harding, 403 Templeton Bldg., Salt Lake City.

WYOMING: Laramie, March 10-12. Sec., Dr. H. E. McCollum, Laramie.

Arkansas Reciprocity Repert

Dr. W. S. Stewart, secretary of the State Medical Board of the Arkansas Medical Society, reports that 21 candidates were licensed through reciprocity from Jan. 1 to Aug. 15, 1913. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons	(1912)	Georgia
American Med. Missionary College, Chicago	(1905)	Nebraska
Indiana University	(1911)	Indiana
Medical College of Indiana	(1895)	Indiana
Kentucky School of Medicine ...(1898) Texas;	(1906)	Kentucky
Louisville Medical College	(1893)	Oklahoma
Louisville National Medical College	(1904)	Kentucky
Tulane University (1908) Louisiana; (1910) Louisiana; (1913) Louisiana.		
St. Louis Medical College	(1889)	Oklahoma
St. Louis University	(1905)	Illinois
Ohio Medical University	(1898)	Ohio
Starling Medical College	(1901)	Indiana
College of Physicians and Surgeons, Memphis	(1911)	Mississippi
Meharry Medical College	(1912)	Oklahoma
Memphis Hospital Medical College	(1899)	Mississippi
Universities of Nashville and Tennessee	(1911)	Mississippi
University of the South, Sewanee, Tenn.	(1901)	Kentucky
Fort Worth University, Med. Dept.	(1901)	Oklahoma

Arkansas November Eclectic Report

Dr. C. E. Laws, secretary of the Arkansas Eclectic Medical Board, reports the oral, practical and written examination held at Little Rock, Nov. 11-12, 1913. The number of subjects examined in was 3; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Georgia College of Eclectic M. and S.	(1910)	76.2
American Medical College, St. Louis	(1903)	89.5
Eclectic Medical University, Kansas City	(1913)	76.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Georgia College of Eclectic M. and S. (1912) Georgia; (1913) Georgia.		

Rhode Island January Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, Jan. 8-9, 1914. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 3, of whom 2 passed and 1 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Harvard Medical School	(1905)	90.2
University of Toronto, Faculty of Medicine	(1913)	88.8

FAILED

College	Year Grad.	Per Cent.
Laval University	(1912)	76.5

Maryland December Report

Dr. J. McP. Scott, secretary of the Board of Medical Examiners of Maryland, reports the written examination held at Baltimore, Dec. 9, 1913. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 56, of whom 32 passed and 24 failed, including 2 non-graduates. Nine candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
[illegible] al Department	(1904)	*
[illegible] rsity (1910) 76;	(1912)	87
[illegible] e	(1913)	82, 82, 89
[illegible] Surgeons, Baltimore	(1913)	81, 83 85
[illegible] (1903) *; (1910) 86;	(1912)	83
Maryland Medical College (1912) 75;	(1913)	79, 80, 85
University of Maryland (1911) 76; (1912) 82;	(1913)	76, 77, 78, 80, 86, 92.
Tufts College Medical School	(1913)	86
Jefferson Medical College (1910) 84;	(1911)	91
Temple University, Philadelphia	(1912)	77
University of Pennsylvania	(1909)	78
Woman's Medical College of Pennsylvania	(1913)	77
Medical College of Virginia	(1913)	78
University of Edinburgh, Scotland	(1902)	85

FAILED

College	Year Grad.	Per Cent.
Baltimore Medical College	(1913)	69, 73
College of Phys. and Surgs., Balt'more (1911) 66;	(1913)	70, *†
Maryland Medical College (1912) 72, *, *, *, *;	(1913)	67, *
Univ. of Maryland (1911) *; (1912) 69, 70, 74;	(1913)	*
College of Physicians and Surgeons, Boston	(1911)	*
Eclectic Medical College, Cincinnati	(1912)	*
Meharry Medical College (1912) *;	(1913)	*
National University, Athens	(1910)	55
Non-graduates	*	*

* No grade given.

† Failed to take full examination.

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Atlanta School of Medicine	(1913)	Georgia
Hospital College of Medicine, Louisville	(1907)	Tennessee
College of Physicians and Surgeons, Baltimore	(1900)	Maine
Maryland Medical College (1907) Virginia; (1911) Virginia; (1913) Georgia.		
University of Maryland	(1909)	Virginia
New York University	(1897)	Missouri
Starling-Ohio Medical College	(1912)	Ohio

One candidate, a graduate of the University of Michigan, Homeopathic College, in 1913, was licensed through reciprocity with Michigan by the Maryland Board of Medical Examiners (Homeopathic), Dec. 15, 1913.

The following questions were asked:

ANATOMY

1. Give the characteristic anatomic features of the first, second and tenth ribs. 2. Describe the greater omentum. 3. Describe the quadriceps extensor muscle. 4. What nerves are found in the orbit? 5. Describe the rectum. 6. Name (*a*) temporary teeth, (*b*) permanent teeth. 7. Describe the bladder. 8. Describe the external ear. 9. Give the location of openings from the accessory sinuses into the nose. 10. Bound the anterior and posterior triangles of the neck.

CHEMISTRY

1. Define and give example (formula) of (*a*) acid salt (*b*) tribasic acid. 2. A patient to whom the doctor gave a large dose of calomel became nauseated and [illegible] medy: what chemical changes probably [illegible] mulas. 3. Give the chemical names and [illegible]: sugar of lead, flowers of sulphur, blue vitriol, white lead, red lead, baking-soda, quick lime, lime-water, limestone, blue stone. 4. Nitrous oxid: preparation, chemical and physical properties. 5. Sulphur: source and preparation. Name three inorganic chemical compounds containing sulphur and give formulas. 6. Iron: source and valence. Give names and formulas of three inorganic compounds containing iron. Give one reaction of iron with a monobasic acid (write formula). 7. Arsenic: source and valence. Give the most important inorganic compound with formula. What is its most important organic compound from a medicinal standpoint? Is this a natural or a synthetic compound? 8. A sample of well-water examined by the state chemist showed the following: free chlorin, 13 parts per thousand; nitrates, 0.18; nitrites, 0.5; albuminoid ammonia, trace; comment on this. 9. Chloroform. To what class of chemical substances does it belong? Give graphic formula. Give its physical and chemical properties. 10. Point out the analogy between marsh-gas (paraffin) and the benzene series of hydrocarbons. Name two prominent members of each group.

PHYSIOLOGY

1. Where [illegible] ed? (*b*) What is the relation of [illegible] stem? (*c*) Describe a method of [illegible] 2. Define secretion and excretion. [illegible] external and internal secretion? [illegible] ss. 3. What is meant by the "ba [illegible] how is it ascertained? 4. State w [illegible] of muscle tissue, the reaction ar [illegible] r mortis and give the cause. 5. What is meant by absorption and nutrition? (*b*) What

absorption takes place in the mouth, stomach, and small and large intestine? (*c*) What are the sources by which the waste products are eliminated from the system? 6. Lymph: description, composition and function. (*b*) State the theories as to the secretion. 7. What purpose is served by the valves of the veins and how are they formed? (*b*) Name some of the veins that have no valves. 8. What is meant by the vasomotor nervous system? 9. What is animal heat and how sustained? (*b*) The difference between warm and cold-blooded animals? (*c*) The normal temperature of the body and the modifying influences over the temperature. 10. Where in the body is each of the following found and what is the function of each: pepsin, trypsin, glycogen, ptyalin, synovia and saliva?

PATHOLOGY

1. Describe mode of transmission of and prophylactic measures used to guard against malarial fevers. What are the principal pathologic changes noted in chronic estivo-autumnal malaria? 2. Describe the general pathologic changes noted after death from congenital heart-disease (morbus caeruleus). 3. Describe the morbid changes occurring in and the anatomic changes that may result from gonorrheal epididymitis. 4. What are adenoids? Discuss the usual pathologic results of well-marked neglected cases. 5. Give practical directions for preventing the spread of typhoid fever. 6. Describe the lesions found in herpes zoster. 7. How does acute miliary tuberculosis originate? 8. Describe a hemorrhoid. 9. What is the difference between a sinus and a fistula? 10. Define edema. Mention at least five conditions that will cause edema of both legs.

THERAPEUTICS

[illegible] 'n Latin, without abbreviation, contain[illegible] condition for which intended. 2. Write [illegible] Ol. terebinthinae; give dose and indi[illegible] therapy of carbolic acid, symptoms of poisoning and antidote. 4. Give the therapy of hydg. bichlor., symptoms of poisoning and antidote. 5. Name two respiratory stimulants and two vasomotor depressants. 6. Explain the theory of diaphoresis. Name three diaphoretics. 7. Explain the immunizing and curative effects of an antitoxin. 8. Give the therapeutics of aconite. 9. Strophanthin: therapy and best method of administration. 10. Gastric lavage: method of use and general therapy.

MATERIA MEDICA

1. What is an acid? Name those in general use, the doses and strength in which they are used. 2. Name five remedies used hypodermically and give doses of each. 3. Ammonium. Give six preparations of ammonium and their doses. 4. Name five preparations each of iron, mercury and potassium and their doses Give the incompatibles of iron and mercury. 5. Write a prescription containing chloral hydrate and bromid of potash for an adult. 6. Name three vermicides. Give average dose and state against which ariety used. 7. Give official name and dose of: Dover's powder; regoric; Donovan's solution; brown mixture; Fowler's solution; offman's anodyne. 8. Aconite. Veratrum viride. To what class f drugs do they belong? The official preparations and doses. 9. Antimony. Give the official preparations and doses. Name two compounds into which antimony enters and their doses. 10. Diphtheria antitoxin. How prepared? Define "unit." Give immunizing and curative doses for a child 3 years old.

OBSTETRICS

1. Describe symptoms and treatment in a case of adherent placenta (third stage of labor). 2. Describe the changes which commonly occur in the head of the child in vertex presentations during a lingering labor, and state their causes. 3. Give varieties of placenta praevia. 4. Describe Harris' method of dilatation of the cervix. 5. Give methods of inducing labor at the eighth month. 6. What are the indications for the use of forceps when the head is at the pelvic outlet. 7. What form of malignant disease may attack the uterus? 8. Describe umbilical hernia of the new-born. 9. What troubles are liable to occur in the mouth of an infant, and what measures would you use to prevent them? 10. Describe the Porro operation, or celiohysterectomy.

SURGERY

1. Give the causes, symptoms and treatment of acute iritis. 2. Give the symptoms and treatment of suppurative mastoiditis. 3. What is the significance of blood in the urine? 4. Give symptoms, diagnosis and treatment of tuberculous disease of the knee. 5. What inflammatory conditions may arise in the right iliac region, with symptoms of each? 6. Give etiology and symptoms of cerebral abscess. 7. Give differential diagnosis of dislocation of hip from fracture of surgical neck of femur. 8. State the most common seat of fracture of the clavicle; give symptoms and describe a method of tratment. 9. What are the indications for removal of the mammary gland? 10. Describe a complete inguinal hernia; give symptoms of strangulation and treatment.

PRACTICE

1. Define: (*a*) endemic disease; (*b*) anasarca; (*c*) Bell's paralysis; (*d*) herpes zoster; (*e*) hematemesis. 2. Define: (*a*) chlorosis; (*b*) hemophilia; (*c*) Hodgkin's disease; (*d*) aphasia; (*e*) hydronephrosis. 3. Differentiate variola and varicella. 4. Differentiate bronchopneumonia and lobar pneumonia. 5. Differentiate neuritis and rheumatism. 6. Differentiate hepatic, intestinal and renal colic. 7. Give treatment of lobar pneumonia. 8. Give treatment of variola. 9. Give treatment of tetanus. 10. Give treatment of acute nephritis.

Correction

We have been asked to announce that the Hahnemann Medical College of Philadelphia was elected to full membership in the Association of American Medical Colleges at the Association's annual meeting of 1913, but that through an error its name was not included in the lists of members published in the annual *Transactions* of that Association.

Book Notices

Die Wassermannsche Reaktion mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. Von Dr. Harold Boas, Privatdozent an der Universität. Mit einem Vorwort von Geh. Med.-Rat Prof. A. Wassermann. Second Edition. Paper. Price, 7.60 marks. Pp. 242. Berlin: S. Karger, 1914.

The second edition of this excellent monograph shares with the well-known work of Noguchi, on "The Serum Diagnosis of Syphilis," the honor of being the most comprehensive and authoritative work dealing with this subject. The technic followed by Boas in his work, as is to be expected, is that of Wassermann, the sheep-hemolytic system being used; while Noguchi employs the human-hemolytic system. The antigen which Boas employs for the most part is an alcoholic extract of human heart (normal or pathologic) as advocated by Michaelis, instead of the aqueous extract of syphilitic liver as originally employed by Wassermann. In this connection it is interesting to recall that the addition of cholesterin to such alcoholic heart extracts greatly increases their efficacy, as Sachs has shown. Boas agrees with this point, but does not employ the combined antigen in many of his tests. Recent work by Kolmer, Laubaugh, Casselman and Williams has established this cholesterin antigen in its proper place.

An extensive discussion concerning the Wassermann reaction in non-syphilitic conditions is given, Boas' results indicating only five positive reactions in 1,927 control cases. Much emphasis is laid on proper technic, and the possible errors of the test are given careful attention. The method of interpretation is elaborated and the worker cautioned against drawing too fine conclusions. A positive Wassermann reaction is regarded as definite evidence of syphilis, while a negative reaction does not exclude the condition, no prognostic or therapeutic meaning being attached to such a negative test. Although a positive reaction indicates syphilis, it is emphasized that it does not necessarily denote that the lesions are syphilitic for which the physician was led to apply the test.

A very thorough and convincing discussion is given on the influence of treatment on the Wassermann reaction and the fact, well known to workers in this field, is elaborated that previous negative or positive Wassermann tests may be converted either into positive or negative tests, as the case may be, under the influence of mercuric or arsenical treatment. It is evident, therefore, that hard and fast lines cannot be drawn regarding the efficacy of treatment if the basis of judgment is made a single negative or positive Wassermann reaction. Boas believes that a patient under treatment should not be regarded as cured unless negative serologic tests are obtained each month during the first year, every six months during the next year and, finally, a negative "provocative" Wassermann under the influence of a salvarsan injection. He further adds that the spinal fluid should show negative chemical and serologic properties at the end of the period of treatment. It will be recalled that Craig adds to this list a negative luetin test. Especially instructive are the tables showing results of this test in various types of syphilitic conditions as well as in non-syphilitic conditions.

A Manual of Surgical Treatment. By Sir W. Watson Cheyne, Bart., C.B., D.Sc., Senior Surgeon to King's College Hospital, and F. F. Burghard, M.S., F.R.C.S., Surgeon to King's College Hospital. New Edition revised and Largely Rewritten by T. P. Legg, M.S., F.R.C.S., Surgeon to the Royal Free Hospital, and Arthur Edmunds, M.S., F.R.C.S., Surgeon to the Great Northern Central Hospital. Volume V. Cloth. Price, $6. Pp. 619, with 152 illustrations. Philadelphia: Lea & Febiger, 1913.

The fifth and last volume in this series is devoted to the treatment of the surgical affections of the pancreas, liver, spleen, neck, breast and thorax and the genito-urinary organs. An extensive revision of the text has been made and many new illustrations added. In speaking of gall-stones the authors fail to mention the fact that the patient does not suffer with pain unless the stone is moving; that when it is definitely lodged, pain is not a symptom. Again, it is stated that when the stone is in the common duct there is always jaundice, a statement not confirmed by clinical observation. The medical treatment of tuberculous cervical lymph-nodes is well described, and the indications for surgical treatment are stated concisely. "Many cases do well without operation" is now a well-known fact. The status of treatment of ophthalmic goiter is succinctly put as follows: "Medical treatment cannot be relied on to cure the disease and should always be employed as a preliminary to surgical measures. Operation should only be undertaken by a surgeon who is accustomed to operating on the thyroid," advice which it is well to heed because the risks of operation in this disease are great. The authors are very optimistic about the surgery of mammary carcinoma. They state that "the results of treatment are on the whole extremely satisfactory, more than half the unselected patients operated on remaining free from recurrence—at any rate, for several years." The clinical experience of most surgeons does not accord with this statement because the unselected cases are usually late cases in which operation offers little if any hope of cure. Such statements surely do harm. The advice to remove the entire breast and its corresponding lymphatic area as high as the apex of the axilla, no matter how small the tumor, is good.

The surgery of the genito-urinary organs is discussed fully. Considerable space is devoted to methods of examination, including pyelography and renal function tests. On the whole, the book cannot fail to be of value, because it is well written by men of wide and varied experience, who have not failed to present a difficult and complex subject in an interesting as well as instructive manner.

Contribution à l'Étude histologique de l'hypophyse pendant la gestation. Par Docteur Alfred Siguret, de la Faculté de Médecine de Paris. Paper. Pp. 60, with illustrations. Paris: Jouve & Cie, 1912.

In this little brochure the author describes the changes which he has observed in the hypophysis during pregnancy. His experiments were made on guinea-pigs and rabbits, and as a result of his studies he concludes that during gestation the glandular lobe of the hypophysis undergoes histologic modifications. Among the changes, those which appeared to him the most marked were: (1) Enlargement of the cellular cords. (2) General hypertrophy of the cells and their nuclei. (3) Diminution of the number of the chromophobe cells and augmentation of the siderophil cells. He believes that the increased activity of the hypophysis due to these changes has something to do with regulating the period of gestation.

Manual of X-Ray Technic. By Arthur Christie, Instructor in Radiology and Operative Surgery, Army Medical School, Washington. Cloth. Price, $2. Pp. 104, with 42 illustrations. Philadelphia: J. B. Lippincott, 1913.

This manual has been prepared "with a view to the needs of the medical service of the United States Army," that is, for men who are compelled to rely on themselves in out-of-the-way places, in the care and use of Roentgen-ray apparatus and in diagnostic Roentgen-ray work, and who must be familiar with the principles and simpler methods of the subject. The book fulfils its purpose well. It is elementary, but sufficiently comprehensive; and the very fact that it is not overburdened with detail makes it the more useful for the practitioner who wishes to learn enough of his subject to get away from bald rule-of-thumb methods, but who has not the opportunity to became a specialist in roentgenology.

The Nervous and Chemical Regulators of Metabolism. Lectures. By D. Noël Paton, M.D., B.Sc., *Professor of Physiology in the University of Glasgow.* Cloth. Price, $2. net. Pp. 217. New York: Macmillan Company, 1913.

This book contains the substance of lectures by the author on the subjects considered. It is recommended to physicians, medical students and others as giving a clear and concise account of the present state of knowledge of the internal secretions and the organs that produce them, with special attention to the interrelations of these organs and their relationships to the nervous system. The book fills a need for a shorter consideration of these subjects than is given by Biedl's "Innere Sekretion," to which it forms a useful introduction for those who wish to go further. It probably would have been of advantage if the title had expressed more directly the nature of the contents.

Miscellany

A Medical Advance in China

Several months ago (Anatomy in the Far East, editorial, The Journal, Nov. 22, 1913, p. 1904) we referred to the advances in medical science which have been made in American colonies in the Far East as contrasted with China and Japan. This was credited chiefly to the fact that, in the former, dissection of dead bodies is allowed, whereas in the latter mutilation of the dead has been regarded as sacrilegious by most of the people. The Chinese objection to dissection is based on filial piety. The parents having given to the child a whole body it would be disrespectful for him not to keep it whole; it would be an act of disrespect if the children of the dead subject did not aid him in preserving the honor of his parents by seeing that his body was buried whole. There is also a custom demanding that bodies be buried in the ancestral home, and of course it would be an insult to a progenitor to send him as a dissected corpse for burial. There is a change taking place, however. The following is from a recent issue of the *Central China Post* of Hankow:

> "While educational and medical bodies in the North have been urging the government to permit the dissection of human corpses by medical students, the new tutuh at Wuchang has actually given his sanction to this practice. Dr. J. MacWillie of the American Church Mission had for some time been urging on the Wuchang authorities the desirability of making dissection legal and had gained General Li Yuan-hung's approval, but not his official sanction. The request was renewed when the new tutuh arrived, and by his action dissection is made permissible by law. It is believed that this is the first occasion of the legalizing of this practice in China."

Concerning this important decision Dr. MacWillie writes:

> "The facts are as stated and this ushers in a new era for China, for it will not be long before the other provinces and then the central government take up the matter. I have it on excellent authority that the Province of Education is now getting the best opinion from all the provinces on the subject."

Two Cases of Leprosy Apparently Cured

Victor G. Heiser, director of public health in the Philippines, in *Public Health Reports*, Jan. 2, 1914, reports the apparent cure of two cases of leprosy with hypodermic injections of chaulmoogra oil and resorcin. These patients were under observation in the San Lazaro Hospital in Manila, and have been discharged after being free from leprosy for a period of two years. They received no vaccine treatment.

One was a girl aged 11 who had large leprous macules over the outer surfaces of both legs, extending from the malleolus almost to the knee, and similar large leprous macules on the forearm. The diagnosis was microscopically confirmed. The administration of chaulmoogra oil was begun in 10-drop doses by mouth three times a day, but nausea developed and the patient refused to take it further. It was then administered hypodermically in a formula composed of chaulmoogra oil, resorcin and camphorated olive-oil in 1 c.c. doses. The injections were repeated at weekly intervals and gradually increased in quantity until they reached 12 c.c. a dose in the course of three months. The dose was then gradually reduced in the same period to 1 c.c. and gradually increased again to the maximum dose. Microscopic examinations made from time to time during the period resulted negatively. A few months after the beginning of the hypodermic treatment the macules became ulcerated and then gradually healed. Treatment was begun in January and the patient was discharged in October.

The other case was that of a Filipino, aged 40. The diagnosis of leprosy was microscopically confirmed. He had a large leprous macule on the outer side of the leg about the malleolus and a similar smaller lesion above the left ear with some infiltration of the lobe of the left ear. The chaulmoogra oil mixture was injected in doses corresponding to those of the first case and increased to 5 c.c. Efforts to give larger doses caused palpitation and precordial distress. The macules began to improve a few weeks after treatment and entirely disappeared in about four months, when the bacillus could no longer be found. Two years later the patient was discharged. In the meantime frequent examinations revealed no return of the disease.

Medicolegal

Power of State Board to Make and Interpret Rules for Granting Licenses—Requiring Practice in Other States for Applicants Therefrom

(*Thomas vs. State Board of Health* (*W. Va.*), *79 S. E. R. 725*)

The Supreme Court of Appeals of West Virginia refused a writ of mandamus to compel the State Board of Health to issue to petitioner Thomas a license to practice medicine in West Virginia. The court says that it deems it a sufficient justification for the board's refusal of a license that, under the reciprocal relation existing between West Virginia and Maryland, a medical licentiate from the latter state is required to reside and practice his profession in Maryland for one year after receiving his license there, before making application for a license in West Virginia, which regulation it appeared that the petitioner had not complied with.

While the board may not have unlimited discretion in the matter of granting or refusing licenses, still, it must necessarily be vested with a wide discretion, especially in the matter of establishing reciprocal relations with other states. Section 9 of Chapter 150 of the Code of 1906, as amended and reenacted by Chapter 66 of the Acts of 1907, clearly gives it power to fix the standard of qualification for practitioners, to examine applicants and to determine what medical colleges are or are not reputable in its judgment. It also has discretion to enter or refuse to enter into reciprocal relations with other states whose standards of qualification are equal to those of West Virginia, or to admit licentiates of those states to practice in West Virginia without examination.

A rule or regulation which requires a foreign medical licentiate to reside and practice in the state which licensed him for one year before making application for a license in West Virginia is reasonable, and his failure to comply with it will justify the State Board of Health in West Virginia in refusing him a license. The year's practice in the foreign state must be in compliance with the law. The petitioner admitted that his Maryland license was not delivered to the recording court in Baltimore, where he claimed to have resided and practiced, until seven or eight months before he made application for a license in West Virginia. If he did, in fact, practice his profession in Maryland prior to filing his license for record, it was unlawful, and could not avail him anything, as under the statutes of Maryland his license was inoperative until it was filed for record.

The interpretation given by the board to a rule or regulation adopted by it will be followed by the court, unless it appears to be clearly unreasonable and arbitrary.

Admissible Evidence in Prosecution for Failure to Report Suspected Case of Diphtheria

(*State vs. Pierce,* (*Vt.*), *88 Atl. R. 740*)

The Supreme Court of Vermont overrules exceptions to a conviction of the respondent, as it calls him, under the statute of that state which requires an attending physician to report to the health officer known or suspected cases of communicable diseases dangerous to the public health. The illness directly involved was that of an infant who was attended by the respondent on several occasions between Jan. 3 and 8, 1911, and who died January 9, from diphtheria, as the evidence showed.

From the very necessities of the case, the state was obliged to rely on circumstantial evidence to prove that the respondent knew or suspected that the case was one of diphtheria. It was therefore proper and legitimate to show that other cases of that disease had existed in the same village in the previous months of October and November, that the houses wherein these cases existed were quarantined, with a placard placed thereon bearing in large letters the word "Diphtheria," provided, of course, that the evidence tended to show that the respondent knew about it, or that the circumstances were such that the jury could reasonably infer that he knew about it. His knowledge of these facts was not the ultimate fact to be proved, but, if established, bore directly on what his subsequent knowledge or suspicion would be when called to treat the patient in question. The evidence abundantly showed that the respondent was in the village at the time, and in such circumstances as to make it almost unbelievable that he failed to observe the diphtheria placards. Whether he did in fact see them was a question for the jury. But the fact that positive evidence thereof was not at hand did not render this other evidence inadmissible.

It appeared that a sister of the patient involved was sick at the house of a neighbor, and died there Nov. 8, 1910. After her burial, and before the sickness of respondent's patient, by direction of the state authorities, November 19, two physicians caused her body to be exhumed, and in the presence of the respondent performed a necropsy thereon and showed the respondent the condition of her throat. The organs removed were shown to a witness for the state, a member of the State Board of Health, who testified that the larynx showed a diphtheritic membrane. The witness was then asked, "Would that (diphtheritic membrane) be apparent to an ordinary practicing physician?" He answered that he thought it would. The court finds the admission of the testimony to be without error.

The court said there was no doubt whatever that the witness could state what the appearance of the larynx indicated to him. The only question on which there could be any doubt was whether it was permissible to allow the expert to state that the indications of a diphtheritic condition were so plain as to be apparent to an ordinary practitioner. That the answer was an inference might be admitted without putting the trial court in error. Inferences from observed facts are admissible when the inferred fact itself is relevant and the constituent facts cannot adequately be placed before the jury.

Here the fact itself was relevant, because, if this larynx on November 19 indicated that the sister had had diphtheria, it rendered more probable the ultimate fact that in January following the respondent knew or suspected that the patient had it. That the constituent facts could not adequately be placed before the jury is equally plain. The ground taken by the respondent was that the statement of the witness could not be true, because he spoke as a surgeon, while the respondent was a physician, and a physician could not be expected to recognize post-mortem conditions and indications. How much more, then, would the jury, wholly untrained in such matters, require the assistance of an expert to appreciate the significance of the physical appearance of this diseased larynx.

In sustaining the admission of this evidence, the court was doing no more than is always done in a malpractice case, wherein a duly qualified physician is allowed to testify to the local standard of professional skill, and that a given course of treatment did or did not meet its requirement, though the witness be of more professional prominence than the physician whose treatment is in question and who practices elsewhere. In such cases the expert is giving the jury information as to the progress and condition of local knowledge.

Nor was there error in admitting reports from the state laboratory on cultures from the throat of another person. These were taken by the respondent between Nov. 14 and 26, 1910, and sent by him, and the reports came back to him. Some, he admitted, were positive. They had the same bearing on the main issue as the other evidence regarding the previous cases of diphtheria—they added to the sum of the respondent's knowledge another circumstance which a thoughtful juror would consider before deciding the main question.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

Missouri Valley Medical Society, Lincoln, Neb., Mar. 26-27.

CONFERENCE OF THE AMERICAN MEDICAL ASSOCIATION ON MEDICAL LEGISLATION

Held in Chicago, Feb. 28, 1914

The Tenth Annual Conference on Medical Legislation, under the auspices of the Council on Health and Public Instruction, was held Tuesday, February 23, at the Congress Hotel, Chicago, with the Chairman, DR. HENRY B. FAVILL, Chicago, in the chair.

Our State Boards of Health

DR. HENRY B. FAVILL, Chicago: It needs no argument on my part to show you that the state boards of health are the great public health functions of this country. To find out what our state boards of health are, how they are equipped, how they are financed, and how they are backed with reference to helping us so far as we may create a public health service throughout the various states which shall have not only efficiency in its individual units, but also solidarity to as high an extent as possible has been the keynote of the Council's work this year, but by no means its sole work. I call your attention to it for the purpose of getting your views, either expressed or tacit, somewhat crystallized as to the merits of the enterprise in which we are engaged.

Report of the Secretary

DR. FREDERICK R. GREEN, Chicago: The work of the Council on Health and Public Instruction has now reached the point at which a comprehensive program can be outlined, embracing all the activities of the Council and the public health functions of the Association, so as to show the relation of the different activities of the Association to each other, as well as to develop a definite program which can be followed. This plan, which was presented to the Council at its November meeting and approved, includes the following:

1. A survey of existing conditions in public health activities in the United States, with a view to ascertaining the exact conditions which now exist, in order that intelligent plans for their improvement may be made. This survey is to be fourfold, covering the following fields:

A. The public health activity of the federal government in its various departments, including a summary of the public health organizations of other national governments as a basis of comparison. Plans are now on foot for the appointment of a recognized public health authority of high grade, whose report will be generally accepted as authoritative, to act as a special representative of the Council of the Association to visit the leading European nations and to make a careful study of the public health activities of our own government, with a view to preparing a report which can be made the basis of recommendations and activity for federal public health legislation in this country.

B. A survey of state public health organizations and activities. This work has already been inaugurated.

C. A similar survey of those municipal departments of health of sufficient importance to justify it. This is being planned, and a report will be prepared as soon as possible covering this field.

D. A survey of voluntary organizations interested in and working on public health problems, such a survey to be carried on through the central Committee on National Health Organizations. This committee was appointed at the New York conference held in April last. The conference was called by the Council and was attended by representatives of thirty-nine out of fifty organizations invited to participate. As a result of the conference a central committee of fifteen was appointed. This committee has undertaken a survey of existing public health organizations, with a view to determining the number of such organizations, their membership, equipment, facilities, work, sources of income, etc., as well as the possibility and the amount of overlapping in duplication.

As a result of this fourfold investigation the Council hopes to present to the public, during the coming year, a complete report showing the amount of work being done in the public health field by federal, state, municipal and voluntary organizations, what is actually being accomplished, what this work is costing and who is paying the bills.

The second line of activity of the Council includes the stimulation and development of public opinion in favor of improved public health conditions. This work is being carried on through the *Press Bulletin*, the lecture bureau, the distribution of pamphlets, and other educational activities of the Council. It includes also the organization of a medicolegal bureau for the study of the legislative side of public health work and the development of model laws on public health topics.

The situation regarding national health legislation remains unchanged. [In this connection the secretary quoted from the report of the Council at the Minneapolis session.]

Second Tentative Report of Committee on Expert Testimony

The report of this committee was presented by Professor Keady of the Northwestern University Law School, Chicago, who said:

During the past few years many proposals for the regulation of expert testimony have been advanced by organizations representing the different learned professions involved. It is now proposed to discuss these different proposals from the legal point of view.

1. That the court be given power to appoint disinterested witnesses. This proposal has appeared in two forms, namely, (*a*) that such witnesses should be the only expert witnesses allowed to testify, and (*b*) that the appointment of these witnesses by the court shall not affect the right of both parties to call expert witnesses. The first form of the proposal would seem to be clearly unconstitutional as restricting the parties in the proof of their case. The recent decision of the Supreme Court of Michigan holding unconstitutional as violating the provision against due process of law, a statute which provided that "in criminal cases for homicide where the issues involve expert knowledge or opinion, the court shall appoint one or more suitable disinterested parties, not exceeding three, to investigate such issues and testify at the trial, this provision not to preclude either prosecution or defense from using other expert witnesses at the trial," has seemed to offer a serious obstacle to the adoption of this proposal. The adherents of this proposal need not be discouraged, however, as certain objections which the Michigan court found in their statutes can be remedied without affecting the general plans, and the courts of most of the other states are likely to be more liberal in their interpretation of the constitution than was the Michigan court. If this proposal should be considered advisable, it is reasonably certain that the constitutional difficulties may be solved.

2. That a fixed group of experts shall be appointed or otherwise determined from which all expert witnesses must be chosen. Although this might be feasible in certain lines of professional activity, it would be impracticable in others. There is a great diversity of opinion regarding the advisability of this proposal. One of the legal difficulties is that the law, in prescribing the qualifications for experts, has not required any professional connection with the subject, the test being, Does the witness have the special knowledge and the experience required? A statute providing for the selection of such a group would probably be held constitutional.

3. That expert witnesses be permitted to make a physical and mental examination of the person regarding whom they are to testify. The difficulty of this proposal, when the question involved is the mental condition of the defendant in a criminal case, has already been discussed. In all other cases it would seem practicable.

4. That the expert witness shall submit his testimony in the form of a written report. This plan is possible only when

the testimony of the witness is as to facts and opinion based on such facts. When his testimony is purely opinion based on facts testified to by others, there is no opportunity for the preparation of such a report.

5. That the expert witnesses shall consult and agree on a joint report—the so-called "Leeds" method. There is no legal objection to this plan. A too partisan lawyer might object to having his witness consult with the witness for the other side, and the witnesses themselves might have difficulty in agreeing. These considerations are, however, of a purely practical character. When experts are appointed by the court a consultation and agreement by such experts would be highly desirable, if not essential.

6. That the number of expert witnesses which each side may call shall be limited. This is possible when the witnesses are to give purely opinion evidence, but not when they testify as to facts. This difference is due to the distinctive character of these two kinds of testimony as set forth in the beginning of this report.

7. That commissions of experts be appointed for the determination of technical matters and that such matters shall not be submitted to the jury. For instance, it has been strongly advocated that in criminal cases in which insanity is set up as a defense, the jury should find only whether the defendant did the wrongful act, and that a commission of alienists shall determine the responsibility of the defendant. In this proposal the true function of the medical expert is lost sight of. Criminal responsibility is a legal question which should be answered by the jury under proper instructions from the court. The function of the expert is to testify as to the mental condition of the accused. A constitutional question is raised every time it is proposed to restrict the functions of the jury in criminal cases.

The committee realizes that the success of any plan regulating the introduction of expert testimony depends on the skill and cooperation of judge, witness and lawyer. It is impossible to frame any proposal that will accomplish good results without these. The present tendency in the legal profession is toward a less antagonistic attitude in the trial of a case, namely, the administration of justice is not being regarded quite so much as a sporting proposition. Likewise the courts are becoming more liberal in upholding the constitutionality of reformative measures. Thus there is hope for the adoption and successful operation of a truly meritorious proposal. This committee hopes to be able to submit such a proposal in the form of a bill at the next meeting of this conference.

Report of the Committee on Public Health Among Women

Dr. Lenna L. Meanes, Des Moines, Iowa, Chairman, presented the report of the Committee on Public Health Among Women.

Report of Committees on Resuscitation from Electric Shock and Resuscitation from Mine Gases

Dr. Walter B. Cannon, Boston, Chairman: Electric shock kills in two different ways: Voltages in the neighborhood of 2,000 will thoroughly paralyze the nervous mechanism of respiration and voltages in the neighborhood of 600 or 800 send the heart into fibrillary contraction. It is impossible at present to resuscitate the fibrillating heart; it is possible, however, to maintain artificial respiration until the normal mechanism of respiration is taken up again after an electric shock. The processes of maintaining artificial respiration are two: manual methods and artificial methods.

About two years ago the National Electric Light Association appealed to the American Medical Association for help in determining the best methods of maintaining artificial respiration, and through the agency of this Council certain members of the American Medical Association were appointed to work in cooperation with members from the National Electric Light Association and members of the Association of Electrical Engineers. This commission investigated very carefully and critically the manual methods of maintaining artificial respiration and also the mechanical devices which have been on the market and have been exploited in the newspapers, notably the pulmotor. As a result of this investigation the committee came out in favor of modifying and supporting the manual method of maintaining artificial respiration, and the committee described this modified method in a chart which can be hung up in power-houses, and in a booklet which can be carried by linesmen as they go on their work. Examination of the mechanical devices leads to the conclusion that they are defective in two different ways: first, mechanically they would not operate under certain conditions; furthermore, they were unphysiologic in that they produced respiration artificially by withdrawing the air from the lungs, and were likely to do injury to the lungs. As a result of the investigation, a subcommittee of the commission went to work and devised another method of producing artificial respiration by mechanical means, which Dr. Meltzer has published in The Journal. While this commission was at work, Dr. Holmes, head of the Bureau of Mines of the United States government, learned of this work and asked that the medical members of the commission be continued in the services of the government, and we investigated conditions in mines in different parts of Pennsylvania and learned the nature of the devices for artificial respiration by a study of the actual conditions on the spot. In mines there is danger not only from electric currents sent into mines, but also from the mine gases, and it is especially desirable that persons overcome by mine gases be supplied with an abundance of oxygen during the period of resuscitation. It was found that the artificial devices which the committee had investigated and had described could be used in connection with oxygen, and this would be immediately applied to the needs which the government had presented. The results of these investigations have been sent in as reports of the National Electric Light Association to the Bureau of Mines and also the American Medical Association.

Report of Committee on Conservation of Vision

Dr. Frank Allport, Chicago, Chairman: Maryland, Ohio, Pennsylvania, Illinois, etc., are doing excellent work, but at present there has been nothing of an active character done in the way of national work with regard to the conservation of vision, and this committee was formed with the hope of starting something of a national character with regard to the matter. At the suggestion of Dr. Green, the first thing the committee did was to cooperate with the *Press Bulletin* of the American Medical Association. It seemed to be the duty of the committee to furnish each week something for the *Press Bulletin* concerning the conservation of vision. The next thing the committee undertook was the publication of some pamphlets on the conservation of vision. They deal with subjects that are practical in their nature, such as wearing glasses, the examination of the eyes of schoolchildren, and industrial and household accidents. Large charts for use in the schools for the inspection of the eyes, ears, noses and throats of children have also been prepared.

Report of Committee on Cooperation with the National Educational Association

Dr. John M. Dodson, Chicago: It was felt that the first thing that should be done was to collect evidence with regard to the presence of a satisfactory condition of the rural schools in many parts of the United States. With a small appropriation made by the National Educational Association, and an equal appropriation by the Council on Health and Public Instruction, a beginning was made and an investigation undertaken as to the situation in certain parts of the country. The National Educational Association Committee offered prizes to the various county schools or counties in the several states for the best showing of the sanitary condition of the schools, such prizes to consist of some materials which would be valuable and interesting in the schools, such as moving-picture apparatus, illustrated material, or something of that nature, not of great intrinsic value, but something useful which would appeal to the county school authorities. I have little doubt that this plan will be adopted by the meeting in Richmond which is being held this week. In that connection another suggestion has been made which I think is a good one, that some time during the coming year addresses in reference to the sanitation of rural school be made in every county in the United States, and if that is done the committee will want to utilize the assistance of the members of the medical profession through the *Council on Health and Public Instruction*. Such a campaign of education would be tremendously far-reaching.

Report of Committee on Protection of Scientific Research

Dr. Walter B. Cannon, Boston, Chairman: The agitation against animal experimentation is one which has thus far manifested itself on the Atlantic coast, and chiefly in centers on the coast, such as Boston, New York, Philadelphia, Baltimore and Washington. The agitation began in New York, but did not reach a very virulent stage there, and it reappeared later in Massachusetts. The activity at first was very great.

The method of meeting the attacks of the antivivisectionists was developed largely through the cooperation of Henry P. Bowditch and Harold Ernst. The method consisted of bringing before the committee representatives of every medical interest that might be interfered with by the legislation which was proposed.

At present agitation against animal experimentation has so signally failed to bring about results in legislation that the agitators are now saying that human vivisection is practiced in hospitals and are trying to arouse sentiment on that basis.

Report of the Committee on Railway Sanitation

Dr. H. M. Bracken, St. Paul, presented the report of the Committee on Railway Sanitation, outlining the work that had been accomplished.

Sex Education and the Preventive Medicine Campaign Against Venereal Diseases

Dr. W. F. Snow, General Secretary of the American Social Hygiene Association, New York: The fight against venereal diseases is designated as a special problem in the combating of contact diseases, and the term "sex-borne" is used to indicate this.

Several lines of activity seem to have been sufficiently tested to warrant endorsement: 1. Efforts to obtain the cooperation of physicians in reporting venereal diseases, and utilizing their opportunity as advisers in their family practice, and advocating publicly a single standard of morals. 2. The encouragement of diagnostic and advisory work like that which has been so successfully done by the New York Health Department and the Oregon State Board of Health. 3. Scientific constructive educational lectures which have been conducted by social hygiene societies for selected groups of shop-workers, department-store girls and other similar groups. 4. The development of serious consideration of the problem by associations of parents and teachers under the coordinated guidance of medical and moral professional auspices. 5. The promotion of suppression and gradual eradication of all the agencies favoring sex-immorality and contributory low standards of morals. 6. Constructive efforts to give in normal schools and universities definite information on the sex problem as it will be met by teachers in the course of their school work.

Wisconsin's Experiment in Marriage Legislation

Dr. C. A. Harper, Secretary State Board of Health, Madison, Wis.: The law went into effect Jan. 1, 1914.

During the first week in January, 1914, there were practically no marriages solemnized. During the month of January, 1914, however, there were 1,202 marriages in Wisconsin. During the month of January, 1913, there were 1,411 marriages in the state, showing a falling off of marriages between the two months compared of 209.

If the action of the legislature reflects public opinion, and in Wisconsin we believe that it does, then the public is strongly in favor of a provision similar to this, as the vote of the members of the legislature was almost unanimous in favor of the measure. Also very little dissension or unfavorable opinion on this law is heard from the general public, the controversy, as before stated, originating almost entirely on the part of physicians. Neither do the male applicants for marriage materially object to the provisions required, but on the contrary, my personal experience has been that all such applicants are strongly in accord with the provisions of the law. Whether the law will stand the test of the Supreme Court or not cannot be foreseen. One of the great benefits to be derived from any law is in the education of the public. That the controversy concerning this law has awakened a great interest and set the people of our state thinking cannot be questioned. The good effects, therefore, whether the law is to remain on the statute books or not, will be extremely beneficial and far-reaching, not only in Wisconsin but also in adjoining states, which have become interested in the experiment.

What Should Be the Relation of the Medical Profession to the Secular Press?

Dr. J. W. Pettit, Ottawa, Ill.: The press is the most powerful means of influencing public opinion in the beneficent lines so much desired by all medical men — the teaching of hygiene, public health, sanitation, preventive medicine and other subjects of general interest and benefit. From my investigations, I am satisfied that the press would welcome cooperation in professional matters.

The stand taken by The Journal is not only an inspiration but also an incentive to publications of all kinds to follow its example. By a strict censorship of its columns it has given the medical profession as much confidence in its advertisements as it has in its editorial columns, with vastly more profit to The Journal itself.

Merchants are bringing pressure to bear on newspapers to discontinue the publication of advertisements of medical quacks and charlatans in the belief that the legitimate advertiser suffers by having his advertisement printed in the same newspaper with that of quack doctors. We also need the aid of the press in bringing about reforms in the medical profession. The very effective way in which it is cleaning out the quacks is an illustration of what the press can do. We need its assistance in medical legislation, to assist in the better administration of laws already on the statute-books, and in exposing the methods of diploma-mills and other medical frauds, which are even a greater menace to the public than the quacks who have thus far been exposed. One of the most remarkable evidences of the increasing influence of medicine is that a medical side to all things is making its appearance, and that it is being recognized that medicine is essentially one of the branches of human learning that requires the cooperation of humanity in its development.

The Charge of Human Vivisection as Presented in Antivivisection Literature

This paper by **Dr. Richard M. Pearce**, Philadelphia, appears in full in this issue, p. 659.

Public Education a Duty of the American Medical Association

Dr. John A. Witherspoon, Nashville, Tenn.: The Council on Health and Public Instruction has accomplished such wonderful results in so short a time that it has laid the foundation for the development of a work which has been a revelation to me. What has been said here to-day about the lay press is very true, for the various articles are intended for publication in the newspapers of the country. Few anticipated it at first, but it certainly appears that the lay press and the medical profession are getting together rapidly. We find that every week 5,000 newspapers in this country are receiving articles that are properly prepared along the lines of prevention of disease.

The more we study the work that has been done, and the more we look into the sacrifices that have been made by the members of our profession in regard to all problems affecting the health and welfare of the American people, the more we see the grand work of the American Medical Association. This association has shown great wisdom in the selection of such a chairman and secretary as we have on the Council of Health and Public Instruction.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Meeting held Jan. 20, 1914

The President, Dr. T. Passmore Berens, in the Chair

The Medical Society of the County of New York

Dr. T. Passmore Berens: Nov. 14, 1914, will be the one-hundred and twentieth birthday of this society. In 1806 its membership was 371, and every doctor in the city was a member of the society in virtue of his right to practice medicine. To-day our membership is 2,429; and we are the largest medical society on the continent, and each applicant must prove his fitness for becoming a member. There are still 2,700 physicians eligible to election who would give strength to our cause. The aims and objects of the society are well known; they have been the same through many years of its existence, and consist in the protection of the health of the community, the elevation of the standard of the profession, and the elimination of the quack and the charlatan. I would make the tentative suggestion that the clinical material in our hospitals be made available to all members of this society. The question which is more perplexing than any other is the determination of certain principles of ethics, violations of which are brought before us continually, particularly the growing tendency to instruct the public through the lay press, and incidentally to bring into prominence the personality and practices of individual physicians. The Comitia Minora, through Dr. Sondern, has been directed to bring this matter before the society. If we are wrong in considering the newspaper articles which he will mention as offensive against the best interests of the profession, we should remodel our ideas relative to the standard of ethics; if we are right, it is to be hoped that this method of calling the attention of those who have offended will work the improvement desired by all.

Publicity in the Lay Press by Members of the Society

Dr. Frederick E. Sondern: Articles appear in the daily newspapers, particularly in the Sunday editions, in the weekly illustrated papers and in the monthly magazines, some written by the physician himself and others by a lay author whose name is mentioned, but in the majority of instances it is difficult to decide if the article is written by the physician or by someone else. Some have no illustrations, the majority have the physician's picture, and some are profusely illustrated, showing the physician at work in office, laboratory, clinic or hospital. Examination of a large number of these publications shows that they can be divided into several groups.

1. Those designed for the publicity of an institution, calling attention to the achievements therein and the advantages it enjoys. 2. Those concerning modes of treatment, and while the primary object seems to be to satisfy the public desire for information on a cure for human ills, again there is unfortunate prominence given to one or more physicians whose pictures usually appear in the article and whose personal success with the remedy in question is exploited. 3. Those concerning one man; detailing his origin, his education, his opportunities, his achievements and his success. Books are written by physicians containing advice on matters of hygiene, sex talks and a host of other subjects intended to improve the public health, and these are sold or distributed gratuitously. Again, there are many instances in which philanthropy is but a cloak for personal aggrandizement. Many of the lectures delivered by physicians to lay audiences belong under the same head.

The public demands information on the progress in medical science; it has a right to do so, and the lay press will soon voice a protest, if under the guise of preventing the publication of articles by prominent physicians, an attempt is made to prevent the demanded publicity of medical matters. This information should go to the public, but what is printed should be the substantiated truth and not the possibly immature ideas of an enthusiast, who may awaken false hope and by the unsuccessful outcome of his efforts, lower the confidence of the public in the profession.

Therefore, on behalf of the Comitia Minora I am directed to move the adoption of the following resolution:

Whereas, The Medical Society of the County of New York fully appreciates the desire of the public for information on medical and surgical advances, and at the same time the need for the maintenance of the best traditions of the profession; be it

Resolved, That the society requests its members when giving information to the lay press, to do so in an impersonal manner; be it further

Resolved, That the society expects its members to conform strictly with the well-known principles of medical ethics.

(To be continued)

NEW YORK NEUROLOGICAL SOCIETY

Meeting held Jan. 6, 1914

The President, Dr. Smith Ely Jelliffe, in the Chair

Intensive Treatment of Syphilis of the Nervous System by Neosalvarsan and Mercury

Dr. Frederick Peterson and Dr. J. W. Stephenson: The method adopted was as follows: Every third day for five injections, 0.45 gm. of neosalvarsan was administered intravenously. In cases of paresis, taboparesis and other actively severe infections, this was supplemented by inunctions of mercury (from 40 to 60 grains) on the days the patient did not receive the neosalvarsan. The majority of unfortunate sequelæ of neosalvarsan are attributable to faulty preparation or administration of the drug. Seventy-five c.c. make too concentrated a solution of 0.45 gm., and from 90 to 100 c.c. were invariably used. Freshly distilled water was boiled at least five minutes and then cooled to room temperature by running water. The apparatus used was the ordinary gravity one and the method of administration was as follows: Thirty c.c. of lukewarm, previously sterilized, normal saline solution were introduced, and as this escaped from the container, the neosalvarsan was poured in, and as the last portion left the container, 30 c.c. of lukewarm normal saline was again introduced. Special care was taken that as small an amount as possible of the neosalvarsan solution came in contact with the warm saline, lest the warmth of the latter increase the toxicity of the drug.

In the fifteen cases covered by this report, three were cases of general paresis, four were cases of taboparesis, six were cases of tabes, one was a case of cerebrospinal lues, and one was a case of meningitis, with gumma. One of the cases developed a severe arsenical dermatitis and resulted fatally. The other cases were uneventful. The immediate effect, or so-called reactions following the first series of injections, were as follows: It was the usual course with tabetics that the pains were much worse from twenty-four to thirty-six hours after the first injection. After the second injection there was sometimes slight exaggeration; after the third, usually none. In a very small number of cases a chill and slight temperature elevation followed only the first injection. There was no case of diarrhea. In a large majority of cases a slight conjunctival icterus appeared after the third injection, but this was of brief duration. In those cases supplemented by mercury the patient usually expressed himself as feeling very weak after the fourth injection, which was apparently attributable to the mercury. In paresis the mental condition was usually more pronounced following the first injection, but was not so affected by subsequent ones.

The illness in the fifteen cases was such that thirteen patients could not pursue their usual vocation prior to the treatment. Among the thirteen, the improvement following the first series of injections was such that eight returned to their work within from six weeks to two months. Four showed slight improvement; two were considerably improved; one died.

The serologic examinations were made from three to twenty-seven days following the last injection. Of the fifteen cases, the Wassermann was positive in the serum only in two cases. One of these remained positive; the other was rendered negative. The Wassermann was positive in the spinal fluid only in two cases. Both of these were rendered negative. The Wassermann was positive in the serum and spinal fluid in eleven cases. One of these was not subsequently examined. Of the remaining ten, six were rendered negative, one weakly positive and three remained unaffected. Of these four, after the second series of injections, the weakly positive became negative and of the three unaffected cases one became negative and one remained positive, while in the remaining case no second test could be made. Pleocytosis was present in thirteen cases and there was a considerable reduction in all cases, with one exception. In twelve the protein test showed an excess of globulin, which was slight in one. Of these twelve cases, nine were rendered negative, and in three there was a slight excess. The one showing a slight excess was rendered negative.

DISCUSSION

Dr. J. Ramsay Hunt: Ehrlich has lately recommended a course of treatment with salvarsan, and then after a brief intermission, a course of treatment with mercury; or the mercury may precede treatment with salvarsan. Wechselmann has attributed a certain number of deaths from salvarsan intoxication to the preliminary use of mercury. He asserts that the mercury produces a mild form of nephritis or renal disturbance, so that when the salvarsan is given, the kidneys are incapable of eliminating the arsenic, and a second injection under such conditions may result in serious symptoms of intoxication. The kidneys are an important factor in elimination, and during such a course of treatment as this the renal secretion should be examined frequently, preferably daily, and at the slightest indication of disturbance, further medication should be postponed and every precaution should be taken to guard against untoward results.

I have seen two cases of very severe intoxication from salvarsan, both following the second injection. In both instances, slightly less than the usual dose was employed, and the full interval of one week was allowed to elapse after the first injection. In one of the cases a severe myelitis developed, and in the other there was a general intoxication, with jaundice. Both cases were most severe.

Dr. W. Leszynsky: It is an open question whether the serologic reactions are changed by the mercury or by the salvarsan. I should be inclined to depend on the action of the former, which is safer than salvarsan. In a number of cases I have used potassium iodid in increasing doses, coincident with injections of neosalvarsan, without untoward results.

Dr. A. Abrahamson: I do not believe that the result of an examination of the cerebrospinal fluid indicates definitely the degree of the infection. I have seen serious paretic and tabetic cases with mild serologic findings, while patients with very slight symptoms often give very positive blood and cerebrospinal findings. The important factors are the symptoms presented by the patient. They deserve more consideration than a negative or positive Wassermann in the blood or fluid.

Dr. H. Goldenberg: Wechselmann at first attributed the fatalities to the so-called *Wasserfehler*, and now he thinks that these are due to the mercury which has been combined with the salvarsan. From the beginning of the salvarsan era, I have combined the salvarsan with mercury injections. I have had two deaths which were not due to the mercury or to the combination of the mercury and salvarsan, but purely to the salvarsan.

The so-called Herxheimer reaction, following immediately, sometimes while the patient is still on the table, or subsequently, the symptoms consisting of flushing of the face, watery eyes, intense headache, swelling of the mucous membranes of the mouth, abdominal cramps, etc., has recently been explained by Milian, a French writer, as being due to a dilatation of the blood-vessels caused by the arsenic. In a number of cases in which he had previously observed this complex of symptoms he was able to prevent them after subsequent injections by the previous intramuscular administration of epinephrin.

Neural Atrophy of the Small Muscles of the Hand, Without Sensory Disturbances

Dr. J. Ramsay Hunt: One of the chief points of clinical interest of the two types of neural atrophy of the small muscles of the hand without sensory disturbances (*a*) a hypothenar type, from compression neuritis of the deep palmar branch of the ulnar nerve and (*b*) a thenar type, from compression neuritis of the thenar branch of the median nerve, is in their resemblance to and possible confusion with the atrophy of the hand-muscles of spinal-cord origin, namely, the Aran-Duchenne type of progressive muscular atrophy, the early stage of amyotrophic lateral sclerosis beginning in the hand musculature, and the various types of subacute and chronic poliomyelitis of syphilitic origin in which the lesions originated in, or were more or less restricted to the lower segments of the cervical cord. Of special importance is the so-called tephromalacia anterior, described by Marie and Foix, in which the atrophy of the anterior horns, limited to the eighth cervical and adjacent portion of the seventh cervical and first dorsal segments of the cord is produced by a vascular lesion of syphilitic origin (endarteritis and periateritis without thrombosis). The hypothenar type of neural atrophy is characterized by a complete paralysis, with consecutive atrophy and reactions of degeneration in all the muscles of the hand supplied by the ulnar nerve (the hypothenar, interossei, adductor pollicis and inner head of the flexor brevis pollicis). There are no objective or subjective disturbances of sensation in the distribution of the ulnar nerve. The ulnar flexion of the wrist is preserved, as is also the function of the palmaris brevis. The motor branch to this small subcutaneous muscle passes in the superficial palmar, which is sensory; the deep palmar is partly motor in function. The preservation of this small motor branch to the palmaris brevis and of the sensory functions shows that the compression lesion is situated in the deep volar branch, after the division of the nerve at the level of the pisiform bone. Just after this division the deep palmar branch passes between the tendinous origins of the abductor minimi digiti and the flexor brevis minimi digiti, to beneath the hook of the unciform bone. The compression neuritis, therefore, by a process of exclusion, must take place in this section of the deep palmar branch.

The thenar type of neural atrophy without disturbance of sensibility is characterized by paralysis and reactions of degeneration, with atrophy of all the small muscles of the thenar eminence supplied by the median nerve. There are no subjective or objective sensory disturbances in the distribution of this nerve. The compression lesion in this type takes place beneath the anterior annular ligament, where the thenar branch, a purely motor nerve, emerges, before dividing into the muscular branches to the abductor pollicis, the opponens pollicis and the outer head of the flexor brevis pollicis.

DISCUSSION

Dr. A. Abrahamson: Several years ago I showed two cases of bilateral symmetrical atrophy of the flexor brevis pollicis at one of the meetings of this society. I saw one of those patients recently, and there has been no change in the condition.

Dr. W. S. Goodhart: It is rather difficult to conceive how a lesion restricted to the seventh or eighth dorsal segment of the cord could produce such a selective action on certain muscles of the hand. Stewart and others recently reported cases in which an atrophy and paralysis of certain muscles of the hand were traced to the presence of a cervical rib. In one of my cases double cervical ribs were present. The initial symptoms were atrophy of the interossei, and the diagnosis of progressive muscular atrophy had been made previously. Removal of both ribs arrested the progress.

The Pancreas.—*According to Galen, an anatomical controversy arose over the pancreas between Herophilus and Eudemus (fourth century B. C.), the latter of whom stated that a fluid emptied out of the pancreas into the bowels and aided in digestion; yet this interesting fact was entirely forgotten under the influence of the humoral pathology of Galen (second century A. D.) who followed the teaching of Aristotle, that the pancreas acted as a cushion or buffer for the stomach and the neighboring vessels. . . . In 1663 Regner de Graaf published a work on nature and use of pancreatic juice; he was also the first to describe pancreatic calculi.*—Deaver and Ashhurst: Surgery of the Upper Abdomen.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

January, LXX, No. 3, pp. 551-764

1 Insanity, Other Than Paralysis, in Locomotor Ataxia. C. W. Burr, Philadelphia.
2 Horace on Minor Psychoses. C. L. Dana, New York.
3 Mendelism and Neuropathic Heredity. A. J. Rosanoff, Kings Park, L. I.
4 Physical and Mental States in Chronic Chorea. N. J. Dynan, Washington, D. C.
5 Precipitating Mental Causes in Dementia Praecox. A. Hoch, New York.
6 Psychoneuroses from Standpoint of Psychiatrist. E. L. Hanes, Rochester, N. Y.
7 Dementia Praecox. E. E. Mayer, Pittsburgh.
8 Recent Trends in Psychopathology of Dementia Praecox. I. H. Coriat, Boston.
9 Proposed Changes in Criminal Law. C. H. North, New York.
10 Miliary Plaques in Senile Brains. W. J. Tiffany, Binghamton, N. Y.
11 Diagnosis of Higher Grades of Mental Defect. W. E. Fernald, Waverly, Mass.

American Journal of Medical Sciences, Philadelphia

February, CXLVII, No. 2, pp. 157-312

12 *Tuberculosis of Breast. J. B. Deaver, Philadelphia.
13 Dental Sepsis: Relation to System. C. N. B. Camac, New York.
14 Pneumonic Hemiplegias: Report of Cases. C. F. Withington, Boston.
15 Splenectomy for Splenomegaly (Gaucher Type): Report of Two Cases. J. F. Erdman and J. J. Moorhead, New York.
16 *Supposed Relation Between Paralysis Agitans and Insufficiency of Parathyroids. I. Greenwald, New York.
17 *Some Angioneural Arthroses (Periarthroses, Pararthroses) Commonly Mistaken for Gout or Rheumatism. S. Solis-Cohen, Philadelphia.
18 Leukoplakia of Pelvis of Kidney and Its Diagnosis. E. Beer, New York.
19 *Inhibitory Action of Certain Anilin Dyes on Bacterial Development. C. E. Simon, Baltimore, and M. A. Wood, Galveston, Texas.
20 Typhlo-Albuminuria. H. Stern, New York.
21 Metabolism, Prevention and Successful Treatment of Rheumatoid Arthritis: Second Contribution. R. Pemberton, Philadelphia.

12. Tuberculosis of Breast.—With the few exceptions of direct inoculation of the breast, through abraded surfaces of the nipples and skin and possibly through the milk ducts, Deaver says, all mammary tuberculosis is most likely a secondary manifestation of the disease. Most of the primary cases are so considered because the original focus is undemonstrable. In the great majority of cases the bacilli reach the breast through lymph channels, probably by retrograde embolic processes. The most important primary foci are located in the axillary, cervical and retrosternal lymph-nodes, and the adjacent ribs, sternum, pleurae and lungs. The tubercle bacillus may perhaps reach the breast through lymphatic channels in the absence of lymph-node involvement. Deaver advises that every person with tuberculous mastitis should be looked on as harboring the disease after the removal of the involved breast, and should, therefore, be kept under strict regimen lest the disease remanifest itself.

When the disease is limited to the upper outer quadrant of the breast and associated with enlarged nodes of the anterior pectoral subgroup of the auxillary chain, in certain cases with a palpable band of neoformation joining the two foci, it is impossible to determine the primary area of disease. The breast in these instances is probably secondarily involved. Invasion of the breast from a primary osteitis of the sternum is exceedingly rare.

16. Paralysis Agitans and Parathyroids.—If the symptoms of paralysis agitans are due to parathyroid insufficiency, Greenwald says we may expect to find that the amount of acid-soluble phosphorus in the blood-serum of such patients is greater than in that of other individuals. As is evident from his work, this is not the case. His results, therefore, do not support that view that parathyroid insufficiency plays a rôle in the etiology of paralysis agitans.

17. Angioneural Arthroses.—To mistake the condition for gout, rheumatism, muscular rheumatism, myalgia, neuralgia, neuritis, etc., Cohen says, is common. In afebrile cases the chief elements in diagnosis are the recurrent tendencies of the disorder, the family and personal history, and the characteristic signs of constitutional peculiarity (idiosyncrasy) exhibited by the patient. In febrile cases, the discrimination from rheumatic fever is at first difficult. A knowledge of the patient and his family helps, but may also lead astray, since a subject of autonomic ataxia is as liable as any other person to rheumatic infection. In the absence of authoritative bacteriologic, serologic or other exact tests for infective polyarthritis, the diagnosis becomes evident only as the case proceeds. It must be based on all the phenomena, not on any one point.

Considerable reliance, however, may be placed on the temperature curve, which, as pointed out by Cohen, may be utterly capricious or exhibit certain more or less well-defined phases, or even an apparent periodicity. Marked increase of eosinophils or a disproportionately low count of polymorphonuclear leukocytes, or a marked excess of urinary indican or ethereal sulphates, favors the diagnosis of angioneural disturbance, but is not conclusive. Nor are any of the reverse conditions conclusive negatively. A conclusive "therapeutic test" is not available.

Treatment must be individualized. During the acute stage the chief elements of treatment are rest (local and sometimes general), regulation of diet, elimination, and (relative) antisepsis. In some cases, special medication (and local applications) of a symptomatic and palliative character may be needed. During convalescence from prolonged febrile cases the administration of roborants and hematinics is desirable. During the intervals of freedom, treatment must be directed toward prevention. To this end, measures for reeducating the vascular reactions and for restoring the tone of the vasomoter centers must be instituted; and the special exciting and determining factors, intrinsic and extrinsic, of the individual case, must be sought out and avoided or combated. In addition to the carefully individualized regulation of life and diet, persistent elimination, antisepsis, applications of hot and cold water, sometimes massage and high frequency electric currents or discharges, and the administration of angiotoxic medicaments (including the preparations and products of the glands of internal secretion) are among the measures applicable.

19. Anilin Dyes and Bacterial Development.—The inhibitory effect which certain violet dyes, like gentian violet, methyl violet, dahlia, etc., exercise on certain bacteria, Simon and Wood found experimentally is not referable to their violet color, but to their chemical structure as triamino triphenyl methanes, and is intimately dependent on their basic auxochromic groups. Acid dyes, irrespective of their chemical structure and color, do not possess this inhibitory power.

Annals of Ophthalmology, St. Louis

January, XXIII, No. 1, pp. 1-215

22 Diagnostic and Therapeutic Uses of Tuberculin in Ocular Diseases, and Some Claims Made for It. A. E. Davis, New York.
23 Two Cases of Binocular Coloboma of Optic Nerve in Same Family. G. S. Crampton, Philadelphia.
24 New Cataract Glasses. J. H. Claiborne, New York.
25 Anomalies of Retinal Pigment Epithelium and Their Clinical Significance. H. Gradle, Chicago.
26 Senile Cataract Extraction Followed by Certain Complications. D. F. Harbridge, Phoenix.
27 *Relation of General Arteriosclerosis to Certain Ocular Conditions.* E. Smith, St. Louis.

Annals of Surgery, Philadelphia

February, LIX, No. 2, pp. 145-320

28 Bismuth Paste Treatment of Suppurative Sinuses and Empyema. E. G. Beck, Chicago.
29 *Nature of Shock. H. H. Janeway and E. M. Ewing, New York.
30 *Dietetic Treatment of Gangrene in Diabetes Mellitus. A. V. S. Lambert and N. B. Foster, New York.
31 *Complete Avulsion of Scalp. F. Flaherty, Syracuse, N. Y.
32 Intrathoracic Goiter. O. F. Lamson, Seattle, Wash.
33 Esophagoscope with Direct Outside Illumination. N. W. Green, New York.
34 *Relation of Posterior Subluxation of Shoulder-Joint to Obstetrical Palsy of Upper Extremity.* T. T. Thomas, Philadelphia.
35 Frequency and Significance of Injuries to Acromion Process. J. B. Mencke, Philadelphia.

36 Stenosis of Pylorus in Infancy. C. L. Scudder, Boston.
37 Intussusception. F. O. Allen, Philadelphia.
38 Modern Laboratory Methods in Diagnosis of Surgical Diseases of Genito-Urinary Tract. A. T. Gaillard, Philadelphia.
39 *Technic for Performing Shockless Suprapubic Prostatectomy. W. E. Lower, Cleveland.

29. **Nature of Shock.**—By means of a considerable number of experiments, Janeway and Ewing found that as severe a degree of shock may be produced by artificial hyperrespiration, and by handling of the intestines when provision is made for keeping the carbon dioxid content of the blood high, as when it is allowed to fall to 40 or 50 per cent. of the normal. Shock produced by artificial hyperrespiration is said to be due chiefly to a long-continued, mechanical interference with the return of the blood to the heart. There is *evidence that the early stages of shock produced by evisceration and handling of the intestines is due to inhibitory afferent impulses.* At the end of the period during which the intestines were handled, none of the animals' nerve centers was exhausted. By such handling of the intestines a complete splanchnic paralysis of local peripheral origin is produced, and it is this paralysis which causes the subsequent fatal fall of blood-pressure and not exhaustion of the nerve centers.

In the presence of a good blood-pressure and unimpaired vasomotor compensatory mechanism, prolonged afferent electrical stimulation for two hours will produce shock or exhaustion of the nerve centers. If trauma to the sensory nerves is a factor in production of shock in an unconscious animal, it is wholly subsidiary to other factors, and it is questionable whether it was apparent in their experiments even when these other factors had rendered the nerve centers more vulnerable by toxic influences, as ether, or by a fall in blood-pressure.

The all-important factor in the development of shock, in so far as the forms which Janeway and Ewing have studied may represent shock in general, they hold, is loss of vasomotor control. It is, at least, the impossibility of regaining this control after it has reached a certain degree which determines the failure to recover. The mechanism of this loss and its maintenance is important. The loss of control and its maintenance is never caused by acapnia or central nervous exhaustion, but, aside from afferent impulses more especially splanchnic sensor impulses which may have initiated the shock and contributed to it, the loss of control was always due to local peripheral causes which in their work were mechanical obstruction, loss of blood and trauma to the viscera. The practical conclusions from these observations emphasize the necessity, in attempting to prevent shock, of providing against a fall of blood-pressure and local trauma, particularly within the abdomen, as the most important of all precautions.

30. **Diet in Diabetic Gangrene.**—Lambert and Foster call attention to certain surgical conditions to which diabetic patients appear peculiarly prone and to some factors which they believe are, in part at least, the cause of the failures, and to suggest a different mode of treatment and emphasize for these cases the importance of a proper diet. The conditions referred to are those changes which take place in the extremities, usually in the toes or feet, and which are classed as diabetic gangrene and more properly spoken of as gangrene in diabetics. They cite cases to show that these are not always cases of gangrene, though often considered as such, but simply infections which run a course rendered peculiar by having occurred in diabetic subjects.

First, with regard to those patients who present no evidence of acidosis, the urine gives no reaction with ferric chlorid (Gerhardt's test). These cases are divided by Lambert and Foster into classes: (1) where the urine becomes sugar free quite promptly after restriction in carbohydrate; (2) where the urinary sugar falls to trifling amounts, 1 to 5 grams per day, on restriction of starch, but fails to disappear completely on this diet. In both of these classes, without evidence of ketonuria, they claim the diet may be reduced at once to very small amounts of carbohydrate by using meats, eggs, fats and vegetables that contain little starch.

In addition to these foods, Lambert and Foster advise to begin the diet with an addition of a small amount of sugar after ten days. As this sugar, even though trivial in amount, indicates that hyperglycemia still persists, and further dietetic change is required, it becomes necessary to interpolate days when the total quantity of food is restricted. This vegetable day may be used once a week, or at most, every fourth day. The urine of this day must be watched for signs of acidosis. When the total sugar excretion has been reduced to 5 or 10 grams a day and will not reduce further, as occasionally happens, this vegetable day is a potent means of clearing up conditions.

When acidosis is a pronounced condition, it is necessary to use alkalies at all times and to meet the condition in *so far as possible by diet. The oatmeal diet gives the best* results, and consists of 64 ounces of oatmeal gruel, black coffee in small amounts, if desired, and water *ad libitum.* This diet is given solely to combat acidosis, but it not infrequently happens that sugar excretion diminishes or vanishes with its use. An oatmeal day may be used once or even twice a week in severe cases, and when the sugar excretion is excessive or obstinate, a vegetable day followed by an oatmeal day, reduces both sugar and ketone excretion.

When the urine becomes free of sugar, it is wise to delay at least five days before permitting an increase in the starch ingest. One may begin by advising for a diabetic whose urine has been free of glucose for one week, that he use three units a day (30 grams of starch). If there be no return of sugar, one unit may be added every week, until the patient is using 70 to 80 grams of starch per day. Further additions should be less frequent and it is a safe rule to permit no more than ten units (100 grams starch) during the first six months of treatment, even though the urine may be constantly devoid of sugar.

31. **Complete Avulsion of Scalp.**—Flaherty's method of *Thiersch grafting is said to be a modification of the regular* Thiersch graft, which he has now used for several years, and finds much more efficient. The grafts are removed in the regular manner, using a sharp razor on the stretched skin. They are then applied to the raw surface, allowing the serum to hold them in place, no solution or moisture being applied. After having covered the desired surface with grafts, it is immediately covered with either bismuth powder or gauze covered with sterilized vaseline, or simple bismuth ointment. This dressing is allowed to remain in place for four days, when on removal, the grafts are found growing much more satisfactorily than when the moist method is used.

39. **Shockless Suprapubic Prostatectomy.**—An hour before the operation, Lower gives the patient a hypodermic injection of morphin and scopolamin, the size of the dose depending on his age and condition. Immediately before the operation the bladder is irrigated and 60 to 90 c.c. of a 5 per cent. solution of alypin are injected through a catheter, the catheter is clamped, and both catheter and solution are allowed to remain. Nitrous oxid-oxygen is administered by an expert anesthetist; this anesthetic, when administered by one trained in its use, being safer than ether and to some *extent,* in itself a preventive of shock.

The bladder is approached in the usual way, except that the skin incision and every division of tissue is preceded by a thorough infiltration with novocain in 1:400 solution. When the bladder is exposed, it is elevated with curved bladder hooks and the bladder wall is thoroughly infiltrated with the novocain solution. By gentle retraction and without injuring the cut edges of the bladder wall, the prostate is exposed intravesically. The bladder mucosa on the projecting prostate is infiltrated with novocain, and along the edge of the capsule a *deep infiltration is made.* With careful and most gentle manipulations, the prostate is enucleated with the finger. Narrow strips of gauze are packed along the side of the catheter on top of the mucous membrane so that the raw surfaces of the capsule are brought in apposition, a procedure which effectively prevents hemorrhage. The two ends of the urethra are thus brought together, so that a continuous funnel-shaped mucous membrane is produced—a most perfect factor.

being in no way hard or thick, but weak or pressed into small cylinders as a sign of spastic complication.

Different from this, the patient afflicted with the atonic form of constipation, if not neurasthenic, often does in no way feel uncomfortable during four, six and eight days or more, though the feces have not yet passed into the rectum. If a large enema is administered, or a purgative given, the patient has a stool consisting of big hard balls, which are generally free from mucus and do not exhibit signs of progressive decomposition.

80. **High Frequency Spark for Prostatic Obstruction.**—The cases of small, fibrous prostates, median bar elevation, and small lobe obstructions, without general enlargements, have been symptomatically cured by Bugbee. The cases of obstruction from a collar of prostatic nodules, without lateral lobes, have been completely relieved where the tone of the bladder was fair, and improved even where the bladder wall was atonic. Cases of general adenoma, where open operation was contraindicated, were greatly improved.

81. **Upper Respiratory Mucous Membranes as Emunctories.**—Hagemann sets up the postulate that the mucous membranes of the upper respiratory passages are eliminative organs for substances resulting from metabolism, which substances circulate in the blood or lymph-currents, or both, in a manner akin to similar processes taking place during the course of certain diseases and after ingestion of various pharmaceutical substances. Applying this postulation to the exasperating array of patients suffering from so-called chronic rhinitis who "make the rounds" without deriving more than temporary relief, Hagemann says, it might not be amiss to transiently consider the local treatment a secondary element, and concentrate efforts on the segregation of the "vera causa."

The "colds in the head" following dietetic and bibulous indiscretions Hagemann cites as familiar instances of misnomers. Supplementary to this hypothesis comes the suggestion that we, while not altogether ignoring, should at least cease to concentrate our attention on the interior of the nose of patients who are sufferers from hay fever and allied disorders. The fact that such persons, having no demonstrable anatomical nasal abnormality, on migrating to a salubrious zone, are promptly relieved of their distressing symptoms, has tended to fortify us in the belief that the etiology of their ailment is simply extraneous. Yet, Hagemann says, it is conceivable that such persons perennially excrete, intranasally, polymorphic substances, which, in the flowering season, unite chemically with certain pollens then extant, thereby forming a product inherently irritating to the mucous membrane on and in which such chemical reaction is taking place.

Michigan State Medical Society Journal, Grand Rapids

February, XIII, No. 2, pp. 73-126

83 Operation for Cataract with Report of Sixteen Cases. D. E. Welsh, Grand Rapids.
84 Ocular Disorders as Symptoms of Systemic Disease. P. J. Livingstone, Detroit.
85 Care and Treatment of Deep and Superficial Injuries of Eyeball. C. L. Chambers, Detroit.
86 Preliminary Report of Ocular Defects of Schoolchildren Two or More Years Below Grade. C. B. Fulkerson, Kalamazoo.
87 Injuries to Head, and Ear Disturbances. E. Amberg, Detroit.
88 Paracutic Deafness: New Explanation and Treatment, with Report of Two Cases. W. Haughey, Battle Creek.
89 Lymphangitis Simulating Otitis Media. L. J. Goux, Detroit.
90 Technic of Submucous Resection. C. H. Baker, Bay City.
91 Personal Experience with Submucous Operation. A. Odell, Detroit.
92 Mastoiditis. E. J. Bernstein, Kalamazoo.
93 Acute Pharyngitis. B. N. Colver, Battle Creek.

Military Surgeon, Washington, D. C.

February, XXXIV, No. 2, pp. 101-200

94 Trip to China. P. M. Ashburn, U. S. Army.
95 Surgeon's Personal Field Armamentarium. G. M. Blech, U. S. Army.
96 Benefits Derived from Camps of Instruction, to Medical Officers, in Conjunction with Field and Line Officers. C. Schultz, U. S. Army.
97 Prophylaxis under G. O. 31, War Department, 1912, for Hawaiian Department. H. I. Raymond, U. S. Army.
98 Food Supply of Enlisted Man in Volunteer Service. O. D. Wescott, U. S. Army.
99 Co-Operation of Line in Hygiene and Camp Sanitation. C. B. Walls, U. S. Army.

New York Medical Journal

February 7, XCIX, No. 6, pp. 253-304

100 *Personal Experience with Tumors of Carotid Body. J. C. DaCosta, Philadelphia.
101 Neoplasms of Bladder. V. C. Pedersen, New York.
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118 *Function of Periosteum in Bone Transplants. Based on Four Human Transplantations without Periosteum and Some Animal Experiments. C. A. McWilliams, New York.

Archives of Pediatrics, New York

January, XXXI, No. 1, pp. 1-80

40 Cases of Edema in Infants. H. D. Chapin, New York.
41 Case of Hydrophobia. A. Hand, Philadelphia.
42 Obscure Manifestations of Rheumatism in Childhood. J. A. Collver, Los Angeles.
43 Experience with "Whey Modified Milk" in Infant Feeding. J. S. Leopold, New York.
44 Breast Feeding. E. C. Jones, Philadelphia.
45 Investigations in Vulvovaginitis by Means of Female Urethroscope. J. F. Sinclair, Philadelphia.
46 Position of Stomach in Children. J. W. Sever, Boston.
47 Case of Multiple Congenital Malformation. A. W. Tallant, Philadelphia.

Canadian Medical Association Journal, Toronto

February, IV, No. 2, pp. 85-180

48 Triple Alliance: Heart, Kidney and Arterial Disease. O. Klotz, Pittsburgh.
49 Symptoms and Treatment of Hyperthyroidism. C. C. Tatham, Guelph, Ont.
50 Small-Pox and Chicken-Pox. H. W. Hill, London, Ont.
51 *Immunities of Tolerance. J. L. Todd and J. G. Adami, Montreal, Ont.

51. **Immunities of Tolerance.**—The purpose of this paper is to express a hypothesis concerning certain forms of immunity. Natives of the tropics, and Europeans who have "become acclimatized" by long residence in the tropics, are often said to be immune to certain tropical diseases, such as yellow fever and malaria. But a very short residence in the tropics is enough to make it obvious to any physician that natives and acclimatized Europeans may suffer from the diseases to which they were said to be immune. As a rule, however, the disease in them is much less serious than it would be in a new-comer. Their immunity in such cases is, then, according to Todd and Adami, in the nature of a tolerance, and it is not a complete sterilizing immunity by which the parasite is destroyed. The diseases in which such a tolerance is most striking are those which are transmitted by insects or by other invertebrate hosts. In the tropics, insect transmittors of disease are never absent, neither are the sources at which they may become infected with disease. Consequently, it is obvious that those living in the tropics, under ordinary conditions, must be constantly exposed to infection by disease transmitted through the agency of biting insects. In short, residents in the tropics may be free from the symptoms usually caused by infection with certain viruses, although they harbor those viruses; and the method by which the viruses are transmitted makes it certain that every individual is normally inoculated with them many times in a year.

If such apparently immune individuals leave the tropics and live for several years in countries in which tropical diseases do not exist, they will, on their return to the tropics, suffer severely from disease produced by the parasites of which they were once tolerant. Therefore, Todd and Adami conclude that the apparent immunity which can be acquired against the parasites causing many diseases, is often the result of a tolerance of those parasites, acquired by their host. The tolerance is maintained by a constant infection by the parasite and it disappears when the infection maintaining it ends. A constant infection on which tolerance depends may conceivably result (a) from a long-continued single infection, or (b) from many reapeated infections. It is possible that tolerances may be produced in both or either ways.

Illinois Medical Journal, Chicago

February, XXV, No. 2, pp. 61-136

52 Rarer Fractures about Wrist Joint. D. B. Phemister, Chicago.
53 "Lest We Forget" Our Lymphatics. W. F. Grinstead, Cairo.
54 Uncinariasis with Case Report. C. Molz, Murphysboro.
55 Subjective Tests of Hearing. G. H. Mundt, Chicago.
56 Blood-Clot Method in Mastoid Operations. A. H. Andrews, Chicago.
57 What Illinois Can Do To Prevent Blindness. W. O. Nance, Chicago.
58 Treatment of Nerve Deafness. J. Holinger, Chicago.
59 Relation of Nasal Troubles to Catarrhal Conditions of Ear. G. W. Geiger, Kankakee.
60 *Time Element in Operative Treatment of Abdominal Injuries. F. A. Besley, Chicago.
61 Obstruction of Intestines: Review of Seventy-Five Cases. C. U. Collins, Peoria.
62 Sporotrichosis in United States. W. W. Hamburger, Chicago.
63 Three Score Years and Ten—and After. C. B. Johnson, Champaign.
64 County Society Bulletin. E. W. Fiegenbaum, Edwardsville.
65 Organization. L. H. A. Nickerson, Quincy.
66 Medical Organizations—Old and New. G. F. Lydston, Chicago.

60. **Operative Treatment of Abdominal Injuries.**—The authors examined the records of 172 cases and summarized their findings as follows: Abdominal injuries are of a serious nature. General mortality, 31 per cent. As to types: severe subcutaneous injuries, mortality, 67 per cent.; gunshot wounds, mortality, 44 per cent.; stab wound, mortality, 8 per cent.; mild subcutaneous injuries, mortality, 0 per cent. The result of delayed operation in serious cases is to increase mortality. In subcutaneous severe injuries their figures show this to be the case, as well as in stab wounds, and they hold it true of gunshot wounds as well. Delay is most common in the subcutaneous injuries, because of failure to correctly diagnose the gravity of the case. In other injuries, delay is sometimes due to an unwarranted assumption that the wound is not perforating. The authors urge early diagnosis and early operation of all serious cases, especially of severe subcutaneous injuries, which are those most often overlooked.

Journal of Cutaneous Diseases, New York

February, XXXII, No. 2, pp. 111-186

67 Intermittent Attacks of Dermatitis in Household, Probably due to Arsenic. G. F. Harding, Boston.
68 Syphilis in Curriculum of Medical Schools. W. T. Corlett, Cleveland.
69 Case of Probable Sarcoid Resembling Lupus Erythematosus: Treatment by Finsen-Ray. H. Fox, New York.
70 Case of Pustulo-Bullous Eruption, Simulating Pemphigus Foliaceus. H. H. Hazen, Washington, D. C.
71 Diffuse and Disseminate Dermatolysis: Report of Case. F. Wise and E. J. Snyder, New York.

Lancet-Clinic, Cincinnati

February 7, CXI, No. 6, pp. 157-132

72 Syphilis of Liver. O. Berghausen, Cincinnati.
73 Pre-Medical Vocational Guidance. P. G. Woolley, Cincinnati.
74 Pancreatitis as Factor in Digestive Disorders. W. D. Haines, Cincinnati.
75 Case of Acute Epiphysitis of Femur—Treated First for Rheumatism. E. B. Glenn, Asheville, N. C.

Medical Record, New York

February 14, LXXXV, No. 7, pp. 277-322

76 *Chronic Diarrhea and Constipation. A. Schmidt, Halle, Germany.
77 Stiff and Painful Shoulders. H. W. Marshall, Boston.
78 Metabolism and Vitality. J. B. Nichols, Washington, D. C.
79 Bacteriemia, Infections and Bright's Disease. W. C. K. Berlin, Denver.
80 *Use of High Frequency Spark for Relief of Prostatic Obstruction in Selected Cases. H. G. Bugbee, New York.
81 *Upper Respiratory Mucous Membranes as Emunctories. J. A. Hagemann, Pittsburgh.
82 Dermatoses due to Toxemia. B. F. Ochs, New York.

76. **Chronic Diarrhea and Constipation.**—Putrefaction of the fecal matter within the bowels, according to Schmidt, is not, as commonly believed, increased in constipation, but on the contrary, is decreased, and the cause is given as an exaggerated digestion of the food on account of the cellulose being better dissolved by these patients than others.

The following is the procedure Schmidt has adopted in cases of spastic constipation: First, forbid the patient to take any more purgative and put him on a common mixed diet. If after the last defecation thirty-six to forty-eight hours have elapsed, examine the rectum with the finger. If it is entirely filled with large quantities of feces and no obstacle is to be made out, it is a case of functional dyschezia, which has to be treated by enemas. If the rectum is free, or only small residues of fecal matter are present, order the patient to take twice a day a suppository of a fair amount of extract of belladonna, and to lie down or at least rest several hours during the day. If he complains of colicky pains, hot compresses must be applied. Now wait several days without troubling about the complaints of irritability, headache, unclear brain, inability of thinking, etc., which are often made by neurasthenic patients. Only once a day the rectum is again examined. If the feces reach the rectum but are not expelled, the case is to be regarded as a combination of functional obstipation with functional dyschezia. More often the stool comes by itself in this period of waiting, the mass being in no way hard or thick, but weak or pressed into small cylinders as a sign of spastic complication.

Different from this, the patient afflicted with the atonic form of constipation, if not neurasthenic, often does in no way feel uncomfortable during four, six and eight days or more, though the feces have not yet passed into the rectum. If a large enema is administered, or a purgative given, the patient has a stool consisting of big hard balls, which are generally free from mucus and do not exhibit signs of progressive decomposition.

80. **High Frequency Spark for Prostatic Obstruction.**—The cases of small, fibrous prostates, median bar elevation, and small lobe obstructions, without general enlargements, have been symptomatically cured by Bugbee. The cases of obstruction from a collar of prostatic nodules, without lateral lobes, have been completely relieved where the tone of the bladder was fair, and improved even where the bladder wall was atonic. Cases of general adenoma, where open operation was contraindicated, were greatly improved.

81. **Upper Respiratory Mucous Membranes as Emunctories.**—Hagemann sets up the postulate that the mucous membranes of the upper respiratory passages are eliminative organs for substances resulting from metabolism, which substances circulate in the blood or lymph-currents, or both, in a manner akin to similar processes taking place during the course of certain diseases and after ingestion of various pharmaceutical substances. Applying this postulation to the exasperating array of patients suffering from so-called chronic rhinitis who "make the rounds" without deriving more than temporary relief, Hagemann says, it might not be amiss to transiently consider the local treatment a secondary element, and concentrate efforts on the segregation of the "vera causa."

The "colds in the head" following dietetic and bibulous indiscretions Hagemann cites as familiar instances of misnomers. Supplementary to this hypothesis comes the suggestion that we, while not altogether ignoring, should at least cease to concentrate our attention on the interior of the nose of patients who are sufferers from hay fever and allied disorders. The fact that such persons, having no demonstrable anatomical nasal abnormality, on migrating to a salubrious zone, are promptly relieved of their distressing symptoms, has tended to fortify us in the belief that the etiology of their ailment is simply extraneous. Yet, Hagemann says, it is conceivable that such persons perennially excrete, intranasally, polymorphic substances, which, in the flowering season, unite chemically with certain pollens then extant, thereby forming a product inherently irritating to the mucous membrane on and in which such chemical reaction is taking place.

Michigan State Medical Society Journal, Grand Rapids

February, XIII, No. 2, pp. 73-126

83 Operation for Cataract with Report of Sixteen Cases. D. E. Welsh, Grand Rapids.
84 Ocular Disorders as Symptoms of Systemic Disease. P. J. Livingstone, Detroit.
85 Care and Treatment of Deep and Superficial Injuries of Eyeball. C. L. Chambers, Detroit.
86 Preliminary Report of Ocular Defects of Schoolchildren Two or More Years Below Grade. C. B. Fulkerson, Kalamazoo.
87 Injuries to Head, and Ear Disturbances. E. Amberg, Detroit.
88 Paracutic Deafness: New Explanation and Treatment, with Report of Two Cases. W. Haughey, Battle Creek.
89 Lymphangitis Simulating Otitis Media. L. J. Goux, Detroit.
90 Technic of Submucous Resection. C. H. Baker, Bay City.
91 Personal Experience with Submucous Operation. A. Odell, Detroit.
92 Mastoiditis. E. J. Bernstein, Kalamazoo.
93 Acute Pharyngitis. B. N. Colver, Battle Creek.

Military Surgeon, Washington, D. C.

February, XXXIV, No. 2, pp. 101-200

94 Trip to China. P. M. Ashburn, U. S. Army.
95 Surgeon's Personal Field Armamentarium. G. M. Blech, U. S. Army.
96 Benefits Derived from Camps of Instruction, to Medical Officers, in Conjunction with Field and Line Officers. C. Schultz, U. S. Army.
97 Prophylaxis under G. O. 31, War Department, 1912, for Hawaiian Department. H. I. Raymond, U. S. Army.
98 Food Supply of Enlisted Man in Volunteer Service. O. D. Wescott, U. S. Army.
99 Co-Operation of Line in Hygiene and Camp Sanitation. C. B. Walls, U. S. Army.

New York Medical Journal

February 7, XCIX, No. 6, pp. 253-304

100 *Personal Experience with Tumors of Carotid Body. J. C. Da Costa, Philadelphia.
101 Neoplasm of Bladder. V. C. Pedersen, New York.
102 Inflating Gastroscope and Duodenoscope. R. C. Kemp and A. Vander Veer, New York.
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In one of DaCosta's cases the growth was extremely rapid from the time the tumors were first noticed, and death occurred within a year. He believes that in all probability the tumors had existed for several or many years before they were discovered and were first noticed when quite large. The growth is almost invariably unilateral. One of DaCosta's cases is the only instance on record of a bilateral growth.

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119 Surgical Treatment of Intramedullary Affections of Spinal Cord: Report of Eleven Cases. C. A. Elsberg, New York.
120 *Heart in Fibroid Tumors of Uterus. J. A. McGlinn, Philadelphia.
121 Comparative Value of Functional Tests in Surgical Diseases of Kidney Secondary to Obstruction in Lower Urinary Tract. L. G. Rowntree, J. T. Geraghty and E. K. Marshall, Baltimore.
122 Intercarotid Paraganglion and Its Tumors: Report of Case. D. C. Balfour and F. Wildner, Rochester, Minn.
123 *Apparent Cures of Renal Tuberculosis. E. L. Keyes, New York.
124 *Roentgenographic Diagnosis of Gall-Stones and Cholecystitis. L. G. Cole, New York.
125 Pericolonic Membranes. J. R. Eastman, Indianapolis, Ind.
126 Fixation of Fractures by Means of Autogenous Intramedullary Bones Splints. C. E. Phillips, Cristobal, Canal Zone.
127 *Indirect Transfusion of Blood. A. Crotti, Columbus, O.
128 *Mathematical Calculation of Prognosis in Fractures at Ankle and Wrist. E. H. Skinner, Kansas City, Mo.
129 Case of Pernicious Anemia Treated by Splenectomy; Marked Improvement. W. S. Harpole and C. M. Fox, Chicago.
130 Extraperitoneal Cesarean Section. W. R. Nicholson, Philadelphia.
131 Some Causes of Failure in Bacterin Therapy. J. F. Biehn, Chicago.
132 *New Appliance for Internal Fixation of Fractures of Femoral Neck. M. E. Preston, Denver.

116. Abstracted in The Journal, November 22, p.1928.

118. See The Journal, January 31, p. 346.

120. **Heart in Fibroid Tumors of Uterus.**—McGlinn's study is based on the records of 240 cases: From this report a definite entity of a fibroid heart is sustained. The author states that if the fibroid tumors of the uterus were the cause of all the heart lesions described in this study, then every tumor, regardless of its size and situation, should be removed—a contention that the most radical would hardly admit. Uterine myomas, occurring in middle and advanced life, are practically always associated with sclerotic heart lesions. These lesions are a part of a general process and bear no relation to the fibroid. Large tumors, by increasing the work of the heart, and tumors causing pressure on the pelvic circulation may produce hypertrophy and secondary dilatation of the heart. Anemia, from hemorrhages, infections and certain degenerations of the tumor, may affect the heart secondarily, causing changes such as fatty degeneration, brown atrophy and cloudy swelling. The majority of cases of fatty degeneration, brown atrophy, cloudy swelling, myocarditis, etc., found in connection with fibroid tumors of the uterus are not caused by the tumor, but by conditions entirely foreign to the tumor.

123. **Apparent Cures of Renal Tuberculosis.**—The most important feature of this case cited by Keyes, is the distribution of lesions in the infected kidney. Its upper pole was converted into a cheesy mass; the remainder of the kidney showed a few evidences of beginning tuberculosis scattered here and there, the most notable of which was an ulceration on one of the lower papillae. The pelvis of the kidney was not far from normal. He points out that we make the pathologic and clinical pictures coincide by assuming that the original lesions were at the upper pole and closed with caseation of that pole, that the kidney pelvis was but little infected, and that with spontaneous shutting off of the tuberculous lesion in the upper pole, the whole process became quiescent for six years, only to break out again with precisely the same process at the lower pole. If this patient had come to autopsy after being killed in an accident, at some time between the first and second outbreaks of his renal tuberculosis, Keyes says, his kidney might have gone down in history as proof that renal tuberculosis can and does heal with only partial destruction of the parenchyma.

The second case is one of partial healing of renal tuberculosis with remission of symptoms for two years. Looking at these two specimens, Keyes thinks we may anticipate the day when specimens similar to these shall be made the basis of a plausible but entirely unwarrantable pathologic attack on nephrectomy for the cure of renal tuberculosis.

124. **Diagnosis of Cholelithiasis and Cholecystitis.**—Indirect evidence of gall-stones, or rather of an accompanying cholecystitis, as presented by adhesions involving the stomach, cap. duodenum, or hepatic flexure, Cole says, is of more clinical value than the detection of the gall-stones themselves, because the adhesions represent an accompanying infection, requiring surgical intervention, while a gall-stone without infection may remain in the gall-bladder indefinitely without causing symptoms. He states that gall-stones may be detected sufficiently often to justify a roentgenographic search for them, but the absence of any direct evidence does not justify one in making a negative diagnosis, and should not prevent surgical intervention, provided it is clearly indicated by the history.

127. **Indirect Transfusion of Blood.**—Crotti gives the following technic: Iodin preparation of the skin of the donor. Local anesthesia with novocain, 1 per cent. Incision of the skin 3 or 4 c.c. long in the angle of the elbow. The cephalic vein is dissected out and cut at the upper end of the incision. The proximal end is ligated with catgut. To the distal end three small mosquito forceps are applied at equal distance one from the other, in order to maintain the lumen of the vein open. A small artery clamp applied a few centimeters below prevents the blood from leaking. The same operation is performed on the recipient, with the difference that the vein is ligated at the lower end of the incision. A blunt needle which has been adapted to a syringe is introduced into the vein of the donor, in the opposite direction of the blood current; blood is aspirated into the syringe, and reinjected into the vein of the recipient, in the same direction as the blood current.

The transfusion can be repeated as often as is deemed necessary without coagulation, provided needle and syringe are freshly washed each time in a warm normal salt solution. The best plan is to have two needles and two syringes and to have one set washed by an assistant while the other is in use. When transfusion is terminated, the veins are ligated and the skin incision closed. By this method any amount of blood can be transfused safely from one patient to another and the exact amount of blood transfused is known. The fact that the blood is venous seems to be without importance.

128. Abstracted in The Journal, Oct. 12, 1912, p. 1397.

132. **Internal Fixation of Fractures of Femoral Neck.**—The essential reason for failure in fixation of fractures of the femoral neck, Preston believes, is due to the fact that the ordinary screw or nail used for this purpose secures its hold only in cancellous tissue. To obviate this difficulty he has devised a screw-plate which secures its hold on the compact tissue below the great trochanter and will maintain the normal angle of the neck in spite of the action of the thigh and hip muscles. It is a combination of a screw and a plate in one piece. The screw portion is of the ordinary wood type and is made in varying lengths, while the plate part is fashioned after the Lane plate. The screw portion joins the plate at about 110 degrees, which is less than the angle at which the femoral neck joins the shaft. The difference is due to the fact that the surface of the shaft just below the trochanter is not parallel with the axis of the femoral shaft, and since the plate secures its hold on this portion of the bone, the angle has been adapted accordingly. The length of the screw portion varies with the size of the bone and the position of the fracture.

When the break is near the inner end of the neck, the screw should extend well into the head of the bone. When the fracture is situated at the base of the neck, a shorter screw will accomplish the desired fixation. A number of sizes should be at hand, so the surgeon may select the proper length. The angle at which the plate joins the screw is such that the plate clears everything as the appliance is being screwed into position. Before the screw is entirely driven home, the plate should be bent with the pliers so it will fit the surface of the femur with which it will ultimately come in contact.

West Virginia Medical Journal, Wheeling

February, VIII, No. 8, pp. 215-248

133 Eclampsia. R. M. Baird, Wheeling.
134 Treatment of Tuberculosis in Home. S. A. Slater, Oil City, Pa.
135 Differential Diagnosis of Unconscious Conditions. E. S. Dupuy, Summer Lee.
136 Chronic Suppurative Otitis Media. H. R. Johnson, Fairmont.
137 Case of Cerebrospinal Meningitis. S. L. Cherry, Clarksburg.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

January 31, I, No. 2770, pp. 229-284

1 *Linitis Plastica, or Leather-Bottle Stomach: Report of Three Cases. J. Bland-Sutton.
2 *Two Years' Operating to the Clock. J. O'Conor.
3 Production of General Symptoms in Hemoglobinemia. J. O. W. Barratt and W. Yorke.
4 Case of Eosinophil Ascites. H. D. Rolleston.
5 Case of Syphilitic Paralysis of Esophagus. R. Saundby.
6 Importance of Leukocyte Count in Doubtful Cases of Appendicitis. G. F. Aldous.
7 Functions of Colon, with Special Reference to Movements of Enemas. H. Drummond.
8 Pre-Peritonitic Stage of Acute Appendicitis. V. Z. Cope.
9 Alternative Methods of Treating Appendix Stump. T. B. Henderson.
10 Appendicitis with Symptoms Resembling Those of Renal Colic. B. Hughes.

1. **Leather-Bottle Stomach.**—The point made by Bland-Sutton is that so-called tumors of the stomach which are pronounced cancer may be cases of linitis plastica. He mentions the fact that surgeons during the last twenty years have often opened the abdomen expecting to find a condition of stomach suitable for gastrojejunostomy, and on exposing the mass have found a hard pylorus embedded in adhesions. Dismayed by such experiences, they have considered the condition to be cancerous, and closed the incision. Reports on the results of gastrojejunostomy often contain accounts of patients who have been submitted to operation in the belief that a localized lump in the wall of the stomach was cancerous; the surgeon has been surprised, on examining the patient two years afterward, to find that the suspected cancerous lump has disappeared. So many of these cases have been observed and reported that surgeons willingly admit the difficulty of deciding between a stomach converted into the semblance of a leather bottle by cancer, or by inflammation. Such changes are not confined to examples in which the stomach is uniformly affected, for the change may be limited to a relatively small area of the stomach, but it shows clearly the advantage, in doubtful cases, of giving the patient the benefit of the doubt as well as the benefit which gastrojejunostomy will bring if the lump in his stomach is of inflammatory origin.

2. **Two Years' Operating to the Clock.**—O'Conor describes his system of technic as follows: The hands and arms are treated liberally to hot water, soap and nailbrush, hot formaldehyd solution (1 in 200), alcoholic mercuric solution (1 in 1,000) and aqueous acid mercuric solution (1 in 1,000), respectively. During operation the sterilized instruments are kept in a basin of carbolic lotion (1 in 40); sponges are all dry sterilized, except the Turkey sponges, which are kept in acid mercurial solution and thoroughly wrung out in warm carbolic lotion before being used. No lotions are used in wounds, and only in cases of abdominal pus collections are Turkey sponges employed, and then merely to form a more effective walling-off of the danger zone. Sterilized silk is used for all intraperitoneal work except when pus is present; then Lister's catgut is exclusively employed. Wounds above the umbilicus are closed by interrupted through-and-through strong silk sutures; below the umbilicus he always employs tier sutures, except in septic cases with drainage. O'Conor never buries silk in any parietal wound, hernial or otherwise. All bleeding points are ligated, and if "dead" spaces cannot be avoided they are left open to drain themselves. No flushing of the abdominal cavity or of wounds is practiced, except in curetting a womb and arthrotomy of infected joints. Dry sterilized gauze dressing is applied to all clean wounds. Collapse and shock are treated by saline infusion, hot saline and brandy enemas, temporary elevation of foot of bed, and hypodermic injections of aseptic ergot, camphorated oil and strychnin.

Indian Medical Gazette, Calcutta

January, XLIX, No. 1, pp. 1-40

11 Surgeon-General James Ellis. D. G. Crawford.
12 Ambulance Transport in Very Difficult Mountainous Country. R. Kennedy.
13 Useful Modification in Extirpation of Lacrymal Sac. F. P. Maynard.
14 Myiasis (Screw-Worm Disease) in Behar. S. D. Rieley.
15 Does Bilharzia (Schistosomiasis) Exist in India? F. Milton.

Journal of State Medicine, London

February, XXII, No. 2, pp. 65-128

16 Co-Ordinated Tuberculosis Scheme. H. O. West.
17 Lutte contre la Fièvre Typhoide par les Moyens Spécifiques; Sérum Antityphique. A. Rodet.
18 Influence of Underground Temperatures on Labor Capacity of Miners. J. Cadman.
19 *Cell Inclusions in Scarlet Fever and Measles. E. H. Ross.
20 *New Method of Fixation. S. Szecsi.
21 Prevention of Mental Defect in Children. T. Thompson.
22 Sanitary Conservancy in Kingston, Jamaica. A. McDonald.

19. **Cell-Inclusions in Scarlet Fever and Measles.**—Although the intracellular parasites disappear from the blood of cases of scarlet fever and measles as soon as the febrile stage is over, they may still be found in the cells of the aural, nasal and abscess pus for long periods after convalescence is established. Ross has been able to produce an apparent numerical reduction of parasites in these sites by keeping the patients under the influence of arsenic. The ideal test in his opinion would consist of the routine treatment with salvarsan of every case of scarlet fever and measles admitted to isolation hospitals, and then the keeping of every case under the influence of arsenic or mercury until discharged from hospital or convalescent home. The patients must be kept under the influence of the drug, because there are parasites to kill, and small irregular dosage is not enough. Ross suggests the following routine precedure to be adopted in all cases of scarlet fever and measles. An initial dose of 0.1 to 0.2 gm. of salvarsan should be given intravenously according to age, and this repeated as soon as practical—within a week if possible. For small children a weak alkaline solution of salvarsan may be administered hypodermically. Then each child should be given either mercury or arsenic in amounts according to practice and similar to that employed in congenital syphilis. But this administration, whether internal or by inunction, must be kept up regularly until the patient is discharged from hospital or from convalescence.

20. **New Method of Fixation.**—Superoxid of benzoyl is suggested as a fixing medium by Szecsi. It is a white powder produced by the action of benzoyl chlorid on H_2O_2 and has the chemical formula of $C_6H_5.CO.O.OCO.C_6H_5$; it is insoluble in water, but easily dissolved in acetone and pyridin. For fixing both the *acetonic* as well as the *pyridinic* solution can be used, although the acetonic solution is more suitable for general histologic and also for hematologic purposes; it is more advisable to use the pyridinic solution for parasitologic purposes. The fixing of tissue is said to be entirely satisfactory with this method. The portions fixed in this manner when stained afterward show far better color contrasts than those obtained by other methods and the Romanowski coloring can be carried out in the sections without the difficulty which has generally been met with in all fixing methods used up till now.

Sei-I-Kwai Medical Journal, Tokyo

January, XXXIII, No. 1, pp. 1-6

23 Experiences with "Krause" Skin Grafting. T. Miyata.

Annales de Gynécologie et d'Obstétrique, Paris

January, XVI, No. 1, pp. 1-64

24 *Gangrene of Cervix from Injection of Caustic for Criminal Abortion. A. Herrgott.
25 *Pregnancy Cholecystitis. J. Audebert.
26 *Pregnancy Pernicious Anemia. C. Sauvage and C. Vincent.

24. **Gangrene of the Cervix.**—The young woman had made three injections of a very concentrated solution of mercuric chlorid, and the entire uterine cervix sloughed off with fatal outcome. The fundus had not been affected directly.

25. **Pregnancy Cholecystitis.**—Audebert reports a case of acute cholecystitis at the fifth month of pregnancy in a woman with a tendency to familial cholemia. The disturbances had been attributed to stomach trouble at first, and the case teaches the necessity for examining the condition of the gall-bladder in all pregnant women with symptoms suggesting

stomach trouble. Ice to the region of the liver and abstention from food brought rapid improvement, and delivery proceeded normally to term. The case was noticeable on account of the profuse intestinal hemorrhages as the cholecystitis subsided; there were also multiple subcutaneous suffusions of blood, although there was no tendency to hemophilia. Complete recovery soon followed.

26. **Pregnancy Pernicious Anemia.**—The pernicious form of anemia was evident through sixteen months, confirmed by nineteen examinations of the blood. There was evidently a predisposition before the pregnancy, but the latter aggravated the anemia into the severest type, the reds dropping to 600,000. A macerated fetus was expelled and at once the blood picture improved, the reds running up in six days to 3,000,000. The fact that the patient was a syphilitic was not discovered until after several months, but the anemia was manifestly of syphilitic origin. The case impresses the necessity for examining for syphilis in every case of anemia in a pregnant woman.

Annales de l'Institut Pasteur, Paris

December, XXVII, No. 12, pp. 1021-1156

27 Research on Cultivation of the Aspergillus Niger. (Recherches sur la substitution au zinc de divers elements chimiques pour la culture de l'aspergillus niger.) Javillier.
28 The Parasite of Rabies. II. (Le diagnostic de la rage par la demonstration du parasite specifique.) L. Negri Luzzani.
29 Origin of Alexin and Its Presence in the Blood Stream. E. Wollman.
30 The Antiseptic Power of the Serum. M. Rubinstein.
31 The Rôle of Water in Growth of Plants. (Recherches de physiologie végétale. I.) P. Mazé.

Annales de Médecine, Paris

January, I, No. 1, pp. 1-128

32 *Pathogenesis of Congenital Hemolytic Icterus. A. Chauffard.
33 *The Lesions of Chronic Progressive Chorea. (Chorée d'Huntington. La dégénération atrophique cortico-striée.) P. Marie and J. Lhermitte.
34 *Lumbar Puncture for Diagnosis and Treatment of Syphilis of the Nervous System. (Comment depister la syphilis nerveuse?) P. Ravaut.
35 The Histologic Process of the Spontaneous Defense of the Organism against Cancer. H. R. Duval.
36 Infectious Congestion of the Lungs and Pleura. (Corticopleurites aigues.) F. Bezançon and S. I. de Jong.

32. **Congenital Hemolytic Jaundice.**—Chauffard's article opens the first number of this new and handsome monthly which is to be devoted exclusively to original articles and book reviews, without any abstract department. It is published by Masson et Cie, who issue most of the leading French medical monthlies in fine style. Chauffard's evidence on congenital jaundice points conclusively to an inherited taint, syphilis or tuberculosis, on which is superposed some abnormal hemolytic action on the part of the spleen as the factors responsible for the hemolytic icterus. These views suggest the necessity for specific treatment for the syphilis or tuberculosis, with possibly reduction of spleen functioning by Roentgen exposures or splenectomy as the last resort. No case of recovery has been known, but treatment along the above lines has never been applied systematically enough to date for any estimation as to the possible therapeutic outcome.

33. **The Lesions of Chronic Progressive Chorea.**—Twelve illustrations in the text and a colored plate sustain the assertions of Marie and Lhermitte that atrophy and its degeneration of the cerebral cortex and of the striate body are the organic lesions responsible for Huntington's chorea.

34. **Nerve Syphilis.**—Ravaut urges the importance of detecting syphilitic involvement of the nervous system before it is severe enough to induce appreciable manifestations. Treatment in this "preclinical" stage has the greatest chances for proving effective, while otherwise the disease is liable to run an insidious and progressive course. Ravaut was the first to call attention to the diagnostic importance of a meningeal reaction in the very earliest stages of syphilis, a reaction too slight to be detected in any way except by examination of the spinal fluid. The cell-count, the albumin content and the Wassermann reaction in the cerebrospinal fluid throw light on what is going on in the nervous system under the influence of the syphilis. The fluid is drawn by lumbar puncture and centrifuged. The fluid is decanted and the sediment is spread on slides of a counting chamber. Half the fluid is put in one tube, which is examined for the albumin content by the flaking on boiling; the other half is used for the Wassermann test. When the fluid shows signs of a meningeal reaction in a case with suspicion of syphilis, he makes intraspinal injections of neosalvarsan, and reports nine cases in which this treatment has been applied to patients in the second or third phase of syphilis with signs of pronounced nervous involvement. He has made sixty-three injections of this kind. The first patient had syphilitic meningitis and great improvement was evident by the fourth intraspinal injection. The young woman is apparently cured at present, three months after the first of the nine injections, a total of 0.07 gm. neosalvarsan. She was given ten intravenous injections besides during the pause after the first six intraspinal injections in the first month. Two tabetic patients were also much improved by the treatment. Another patient had transverse myelitis and paraplegia but improved under the intraspinal injections; the dose was then increased and then the paraplegia reappeared. Ravaut leaves the question open as to whether this return of paraplegia was a relapse or the result of the toxic action of the drug. The other patients have advanced general paralysis and are still under treatment, except one who has been apparently cured for five months to date. Ravaut warns that with this drug the toxic action may not make itself felt for several weeks after its administration, and the toxic action is liable to be more severe the more seriously the nervous system is already affected.

Archives Générales de Chirurgie, Paris

December, VII, No. 12, pp. 1409-1536

37 Present Status of Intrathoracic Surgery. N. Lapeyre.
38 Fungus Surgical Processes on the Limbs. (Les nouvelles *mycoses chirurgicales des membres.*) J. Leclercq.
39 *Limping as Symptom of Appendicitis. (La claudication appendiculaire.) D. G. Zesas.
40 *Tuberculosis of the Tarsus. (Tarsectomie totale pour tuberculose.)* P. Mauclaire.

39. **Limping as Symptom of Appendicitis.**—Zesas says that if the pain with acute appendicitis is not always localized at McBurney's point this is still less likely to be the case with chronic appendicitis. One of the most common distant localizations of the reflex appendicular pain is in the right hip joint. The patient has none of the ordinary symptoms of appendicitis and complains only of pain in the trochanter and femoral region and especially in the right hip-joint. The pain is generally intermittent, increases during walking or after a sudden movement of the joint, and spreads toward the knee or buttocks. He reports an instructive case of the kind: A girl of 16 had complained for several months of pain in the right groin and she finally began to limp. The hip-joint was not tender and bending or extending the joint did not cause pain. After a period of indecision, a sudden attack of appendicitis compelled removal of the appendix, which put an end at once to all hip-joint trouble and there has been no pain or limping since. The appendix was found lightly adherent and thickened. He cites three similar cases in detail, recently reported by Rochard and Stern and mentions Ménard's history of a child of 12 who had been limping for several weeks and had been sent to Berck with the diagnosis of hip-joint disease. Three months after her arrival she had an acute attack of appendicitis and after the appendicectomy there was no further hip trouble. The evidence seems to be in favor of a purely reflex pain rather than neuritis in these cases. They teach the necessity for careful exploration of the iliac fossa in all cases of supposed hip-joint trouble. If the cecum is found thickened and distended and if the region is tender on pressure, the proper treatment suggests itself at once.

Archives des Maladies du Cœur, etc., Paris

January, VII, No. 1, pp. 1-80

41 Effect on Heart Action of Atropin and Pressure on Eyeball. (Automatisme ventriculaire intermittent, spontané ou provoqué par la compression oculaire et l'injection d'atropine dans les bradycardies totales.) L. Gallavardin, P. Dufort and Petzetakis.
42 Case of Primary Subacute Myocarditis. G. Roque and L. Lévy.

43 Diagnosis of Effusion in the Pericardium. C. Doljan.
44 Cerebral Hemorrhage in Chronic Myeloid Leukemia. C. Laubry.

Bulletin de l'Académie de Médecine, Paris

January 13, LXXVIII, No. 2, pp. 45-55

45 Dysentery with Spirilla and Amebas in the Intestines. (Deux cas de dysenterie amoebo-spirillaire.) P. Teissier.
46 *Vegetable Diet for Diabetics. (La cure de légumes secs chez les diabetiques.) M. Labbé.

46. **Vegetables in Diabetic Diet.**—Labbé states that diabetics sometimes are unable to digest oatmeal; even at the best, it is a food poor in albumin and nitrogen. He has found that diabetic patients thrive much better on a three-day course of a dry vegetable diet. They digest it readily; it is eaten with greater appetite, and does not have a constipating effect like milk, or induce diarrhea like the oatmeal. The ration is 300 gm. of legumes with 150 gm. of butter, three to six eggs, and three to six rolls made from antidiabetic flour. He permits three or four glasses of Bordeaux wine and some green vegetables, but no meat. Besides peas, beans and lentils, the soy bean might be utilized, although this is difficult to cook. Some of the patients follow this diet for a week at a time or longer. The benefit is particularly marked in severe forms of diabetes, both the glycosuria, the acidosis and the nitrogen balance all showing improvement. In some cases the sugar disappeared entirely from the urine on this diet, when it had persisted practically unmodified on all other diets. He found in one case that only 30 gm. of sodium bicarbonate were required to neutralize the urine on this vegetable diet, while this could not be accomplished with even 40 gm. on other diets. Acetonuria is least, he says, on this dry vegetable diet, and the proportion of non-dialyzable colloidal nitrogen in the urine is reduced to the minimum. On the other hand, the elimination of amino acids and of ammonia seems to be augmented. He reiterates in conclusion that this dry vegetable diet is indispensable when coma is impending, and actually prolongs life.

Journal de Médecine de Bordeaux

January 25, LXXXV, No. 4, pp. 51-74

47 Abdominal Influenza in Boy of 13 with Temperature of 105.8 F. (Grippe hyperthermique.) J. Vergely.
48 Restriction of Fluids in Treatment of Gastro-Enteritis in Infants. (Le régime sec comme traitement des gastro-entérites infantiles.) J. Andérodias.

Lyon Chirurgical, Lyons

January, XI, No. 1, pp. 1-112

49 *Tuberculosis as a Cause of Cystic Neoplasms. (Du rôle de la tuberculose dans la production des néoformations kystiques.) A. Poncet and R. Leriche.
50 *Variations in the Epinephrin Content of the Adrenals after Anesthesia. C. Oliva.
51 The Value of Surgical Treatment in Bright's Disease. J. Murard.
52 Peridental Cysts Caused by Tuberculosis. (Kystes paradentaires et tuberculose.) G. Massia and A. Therre.

49. **Tuberculosis as a Cause of Cysts.**—Poncet and Leriche believe that tuberculosis is the chief cause of benign cystic new growths. They call attention to the frequency with which latent tuberculosis is found in patients who have goiter, and cite the work of several authors who have shown by histologic examination that apparently simple goiters are often tuberculous. They believe that adenomatous proliferation is one of the ways in which the thyroid reacts to tuberculosis. Cysts of the ovary showing no specific tubercular lesions are frequently found in connection with tuberculosis of the tubes. A number of cases are cited. They conclude that these are due to inflammatory tuberculosis of the ovary which reacts to the tuberculous process by the formation of cysts.

50. **Epinephrin Content of the Adrenals after Different Anesthetics.**—Oliva carried out a series of experiments on dogs to determine the effect of ether and chloroform anesthesia on the epinephrin content of the adrenals. He found that the decrease after chloroform was much greater than after ether, and that it persisted for a long time, while after ether the adrenals became normal again in ten to twelve hours. When morphin was given before the chloroform, it seemed to delay the bad effect on the adrenals, but only so long as the influence of the morphin persisted. After that the epinephrin content was persistently lowered, just as in the cases where morphin was not given. Morphin given before ether did not seem to make any special difference in the effect of the anesthetic. Chloroform, therefore, is much more toxic than ether as it inhibits the tonic effect of the epinephrin on the sympathetic nervous system. Delbet believes that a large part of the serious results following chloroform anesthetization can be prevented by giveng epinephrin in conjunction with it.

Presse Médicale, Paris

December 20, XXI, No. 103, pp. 1037-1048

53 The Modern Diagnosis of Cancer of the Stomach. R. Savignac.

Revue de Chirurgie, Paris

January, XXXIV, No. 1, pp. 1-104

54 *Shock. (La théorie cinétique du shock et l'opération sans shock. Association anocive.) G. W. Crile.
55 Access to the Elbow from the Front. (Les voies d'accès antérieures à l'articulation du coude.) H. Billet.
56 Relics in Adults of Congenital Diverticulum in Omentum. (Le diverticule épiploique droit chez le nouveau-né.) J. Leveuf.
57 *Regeneration of Tissues in Implanted Rubber Sponge. (Nuova carne.) D. Fieschi.
58 **Coccygodynia.* (*Etude critique sur la coccygodynie.*) Hamant and R. Pigache.

54. **The Shockless Operation.**—Crile's work in this line is familiar to readers of recent volumes of The Journal.

57. **Regeneration of Tissues in Implanted Rubber Sponge.**—Fieschi calls the results of his method "new flesh," and states that since his experimental work commencing in 1911 he has been applying it in the clinic for the last year or two and in every instance with complete success. His attention was called again and again to the difference in the reaction on the part of the tissues to a piece of gauze left in the tissues and to a piece of rubber drain; there seems to be a kind of chemical affinity between the tissues and rubber. Strips of rubber sponge tissue buried in the depths of the peritoneum of dogs and rabbits or implanted in the depths between muscles, healed in place without the least inflammatory reaction, even when a chunk of rubber tissue several cubic centimeters in size had been introduced into the peritoneum. There was sometimes a slight swelling of the region first, but this soon subsided without leaving a trace, and when the animals were killed six months later, the engrafted rubber sponge was found grown all through with apparently normal tissue. It had penetrated into and filled all the cavities and crevices, as can be seen in the colored plates showing the new flesh thus formed in one dog and one rabbit.

He has not had much opportunity for applying the method in practice, but the complete success realized in two cases of femoral hernia justifies, he thinks, wide adoption of the technic. The femoral canal is rather difficult to manage when there is a tendency to hernia; eloquent testimony to this difficulty is afforded by the multiplicity of procedures advocated for treatment of femoral hernia. He found records of fifty different methods even in the modest medical literature accessible to him at Bologna; he lists them all and comments on the unfavorable conditions in the region which render the tissues so poorly adapted to be drawn down or up or stretched to close the canal. By inducing the production of an entirely new tissue at the spot, new flesh, forming in the interstices of a chunk of rubber sponge tissue, first sterilized in physiologic salt solution and then fitted to plug the canal, the operation took very little time; the wound healed as simply and promptly as after any herniotomy, and the results have been perfect to date, over a year, in the two working people whose cases are reported and illustrated. There can be no doubt, he thinks, that the rubber sponge has become transformed into a living flesh plug, closing the orifice for good.

58. **Coccygodynia.**—This term should be reserved exclusively for pain, induced or spontaneous, localized exclusively in the coccyx. The pain is due to dislocation of the coccyx from some trauma, either internal, during delivery, or external, some shock or fall on the coccyx region. The writers insist that treatment generally must be surgical; medical measures are only briefly palliative. Resection of the coccyx puts an end

to all the trouble and entails no functional disturbance. In one of the two previously unpublished cases reported, the woman had been kicked in the coccyx region and the pain at once had been extremely severe and it continued to increase. The dislocated coccyx was palpated through the rectum, but under hot applications, kept up for two weeks, the coccyx returned to place; no protrusion could be palpated and all trouble was at an end. The other patient was a cavalry officer who years ago fell on the coccyx region and it became so painful that he is in constant pain except when reclining on his side. He gets up for dinner but keeps reclining all the rest of the time, and when he has to go out of doors to attend to official matters, he takes an injection of morphin. Various courses of medical measures have given no relief, but he has constantly refused to permit the simple operation which, if done in time, would most certainly have freed him from all trouble from his coccyx. A number of cases are on record in which fracture or dislocation was found at the operation for coccygodynia, so that the surgical nature of the persisting trouble has been established beyond all doubt.

Archiv für Kinderheilkunde, Stuttgart

LXII, Nos. 3-4, pp. 161-320

59 *Case of Atrophy of Optic Nerve After Pertussis; Seventh on Record. (Opticusatrophie nach Keuchhusten.) E. Roedelius.
60 *Advantages of Malted Gruel for Sick Infants. (Behandlung von Magendarmkatarrh und Atrophie bei Säuglingen mit Malzsuppe.) I. Rosenthal and H. P. T. Oerum.
61 Anapnylaxis and Anti-Anaphylaxis in Young Tuberculous Children and Relation to Tuberculin Treatment. G. Di Cristina and G. Caronia.
62 Tuberculosis Among the Schoolchildren at Odessa, Russia. (Zur Frage über Tuberculose in der Schule.) J. M. Arluck.

59. **Atrophy of the Optic Nerve after Whooping-Cough.**—The child in question died a few weeks after the whooping-cough from intercurrent diphtheria, after it had become totally blind. Necropsy showed an abnormal space between the optic nerve and its sheath, but the cerebrospinal fluid was limpid and not under high pressure at the time the child was examined, after the onset of the diphtheria. All other causes except the strain of the pertussis and its toxic action could apparently be excluded. Roedelius knows of only six similar cases on record and one of the other children recovered spontaneously and another after lumbar puncture. One person in the group was a woman of 40 who developed bilateral papillitis in connection with protracted whooping-cough with retinal hemorrhage, but the condition improved later.

60. **Malted Gruel for Sick Infants.**—Since 1906, 242 infants have been fed systematically for more than eight days on malted gruel at the Copenhagen general hospital, and the impression has been decidedly favorable to this form of infant feeding. The children put on this food all had severe gastrointestinal catarrhal affections or were in a state of atrophy. Eight of the children had no appetite and sixteen others did not thrive on the gruel. If the child can be kept alive past the first week, a favorable outcome may be counted on. Nearly all the very sick children recuperated wonderfully, it is stated, on the malted gruel. It is of course only for transient use, to bridge the child over to ordinary food, and it never was given for more than two months. It is very simply and easily prepared and inexpensive.

Berliner klinische Wochenschrift

January 19, LI, No. 3, pp. 97-144

63 *Vaccine Therapy with Sensitized Virus. A. Besredka.
64 *Cure of Tuberculous Peritonitis by Injection of Nitrogen into Peritoneal Cavity. G. Brückner.
65 *Temporary Resection of the Palate. (Gaumenresektion.) C. Partsch.
66 *Congenital Dislocation of the Hip Joint. (Erfahrungen und Erfolge bei der blutigen Reposition
luxation mit dem medialen vorderen
67 Sarcoma After Exposure to Ultraviole
twicklung nach Quarzlampenbehandlung.) H. Simon.
68 *Magnesium Sulphate in Treatment of Tetanus. H. Stadler. Commenced in No. 2.
69 *Athletics and Accidents. (Sport und Unfall.) H. Bartsch.

63. **Sensitized Virus in Vaccine Therapy.**—Besredka's method and results were reviewed editorially in The Journal, Nov. 15, 1913, p. 1814.

64. **Injection of Nitrogen into Peritoneal Cavity in Treatment of Tuberculous Peritonitis.**—Brückner says that the principle of the method of artificial pneumothorax in treatment of pulmonary tuberculous processes has not been applied as much as it deserves in treatment of adhesive pericarditis, where it might work wonders in preventing the adhesion of the sheets of the pericardium. It also checks effusion into any cavity, and seems to have a specific action on tuberculous processes. These features of the method commend it also for treatment of tuberculous peritonitis. Air or oxygen have been injected for this purpose by a number of clinicians, Nolen having published this as a new method of treating peritonitis as long ago as 1893. Brückner thinks that nitrogen is better adapted for the purpose, and reports the case of a young man with ten healthy brothers and sisters, who developed in 1912 tuberculous peritonitis with recurring ascites, and no benefit from laparotomy twice repeated, Roentgen exposures or inunctions. Then, after tapping anew, withdrawing 2.5 liters of ascitic fluid, 500 c.c. of nitrogen was injected into the peritoneal cavity with the ordinary artificial-pneumothorax technic. Nine days later 600 c.c. was injected without withdrawing the effusion present. A third and fourth injection followed, of 800 and 600 c.c. of nitrogen, all in the course of two months, during which time the patient rapidly improved and the abdomen seemed to be free from ascites. He then spent some time in the country and now, eight months after commencing the injections of nitrogen, he seems perfectly well and strong. The abdomen is soft and apparently normal except that in the right side traces of the thickening of the omentum can still be palpated. No ascites can be detected even in the knee-elbow position, so that there has evidently been a complete and permanent cure.

65. **Temporary Resection of the Palate.**—Partsch reports the entirely satisfactory outcome in three cases in which he obtained access years ago to the nasopharynx by temporary resection of the palate. One case dates from 1897. Intubation aids in the operation, and this technic permits much more ample access and oversight than other methods, as he describes in detail.

66. **Correction of Congenital Hip-Joint Dislocation.**—Ludloff describes the technic which he has found most effectual for this purpose. He operates through an anterior 15 cm. incision along the middle of the joint, the limb abducted at a right angle, and has thus operated on eighteen joints in fourteen children; all are completely cured except those who have been operated on too recently for a decisive outcome, as yet. With this anterior incision the head can be reduced and held in place more readily, hollowing out the acetabulum and cutting the joint capsule around its base. Another advantage is that there is no danger of a stiff joint or of recurrence of the dislocation if the gap in the capsule is closed with a piece of fascia. His experience also demonstrates that by carefully preparing the child, danger of local infection can be certainly warded off. He describes his technic minutely, dwelling particularly on the importance of considering conditions in respect to the psoas muscle, the capsule, the acetabulum and the head and neck of the femur.

68. **Magnesium Sulphate in Treatment of Tetanus.**—Stadler tabulates statistics in regard to tetanus treated by various methods. The mortality before introduction of tetanus antitoxin ranged from 62.2 to 84.6 per cent., in three compilations totaling 427 cases. With serotherapy the mortality in 484 cases was from 42 to 69.6 per cent., but classifying these cases according to the length of the period of incubation and mode of injection of the antitoxin, the mortality dropped to 57 per cent. in 7 cases with an incubation of less than ten days, and to 0 per cent. in 3 cases with an incubation of over ten days. The 51 cases in which magnesium sulphate has been given by intraspinal injection are tabulated in detail, as also the 7 cases in which the magnesium sulphate was injected subcutaneously, and also 101 cases in which Baccelli's method of intravenous injection of phenol was applied, with a mortality of only 17.8 per cent. There was no mortality among the 7 patients treated by subcutaneous injection of

magnesium sulphate, and of only 33 per cent. among the 37 cases in which the magnesium sulphate was injected by lumbar puncture. An especially favorable feature of the magnesium sulphate treatment, he says, is the prompt relief of pain. All his tables show that the mortality of tetanus has been constantly improving since the introduction of tetanus antitoxin, and this should be given, he insists, whatever other method is applied.

69. **Sports and Accidents Connected Therewith.**—Bartsch thinks that the time has come for compiling general statistics in regard to the accidents and injuries connected with the various sports, and suggests a collective inquiry on the subject.

Deutsche medizinische Wochenschrift, Berlin

January 15, XL, No. 3, pp. 105-160

70 Treatment of Acute Mania. (Behandlung der akut bedrohlichen Geisteserkrankungen. VIII.) Grober.
71 Relations Between Hypophysis Functioning and Diabetes Insipidus. C. *Römer.*
72 Necrosis and Sequester Formation in Bone. G. Axhausen.
73 *Importance of Certain Forms of Mixed Infection. (Bedeutung der fusospirillären Symbiose bei anderen Erkrankungen.) H. C. Plaut.
74 Gastric Ulcer Involving Pancreas. (Zur Radiologie des pankreaspenetrierenden Magenulcus ohne pylorospastischen 6-Stunden-Rest.) R. Bacher.
75 *The Hemorenal Index of Kidney Functioning. R. Bromberg.
76 Formation of New Vagina from Sigmoid Loop. E. Ruge.
77 Total Inversion or Prolapse of Puerperal Uterus. J. Allmann.
78 *Treatment of Deafness and Tinnitus. J. Hegener.
79 Diagnosis of Tuberculous Bronchial Lymph-Nodes. Warnecke.
80 Interference of Hexamethylenamin with Tests for Albuminuria. (Vortäuschung von Eiweiss nach Hexamethylentetramin.) E Schmiz.

73. **Mixed Infection with Spirilla and Fusiform Bacilli.**—Plaut thinks that the symbiosis of these microbes with others is an extremely important factor not only in affections of the mouth and throat but in those of the skin and lungs and in surgical processes. This mixed infection with syphilis is an extremely frequent occurrence, and it is often difficult to decide whether a throat affection is due to syphilis or to this symbiosis or both. The above symbiosis may prove a complication of diphtheria, in which case it aggravates materially the prognosis. It sometimes accompanies pyorrhea, and the latter may prove amenable to treatment after the spirilla and fusiform bacilli have been eradicated. For this he recommends salvarsan internally and in local application (0.1 gm. salvarsan in 1 gm. glycerin). Many cases in his experience in which the loosened teeth grew firm again after this treatment, justify its general adoption. Lupus ulcerations with this complicating mixed infection and cutaneous processes have always been favorably influenced also by this treatment. Particularly malodorous bedsores are generally of this character, and are amenable to the above treatment.

The same applies to fetid gangrene of the lungs, cancer of the lungs, chronic bronchitis, with or without fetid sputum, and bronchiectasia. Plaut has again and again discovered the spirillum and fusiform bacillus combination in such cases, but he has only recently begun to treat them with salvarsan. The results to date are encouraging. The only drawback with this treatment is that the public believe it is good only for syphilis, and object to its being administered for other affections. It is hard to convince even the general practitioner, he remarks, that salvarsan has a destructive action on other spirilla besides the pale spirochete. Plaut reiterates that salvarsan in small doses is no more heroic than numbers of other drugs, while the prompt eradication of the spirillum-fusiform symbiosis may prove an actual life-saving measure in some cases. It is important, of course, to individualize, but it is certainly indicated when the patient's pains, etc., are undermining his vitality.

75. **The Hemorenal Index.**—This is the ratio between the inorganic salts in the blood and urine. Bromberg lauds it as the simplest means for estimating kidney functioning. (See THE JOURNAL, 1912, lviii, 2003.)

78. **The Latest Methods of Treating Deafness and Tinnitus.**—Hegener reviews the various methods and appliances that have been proposed of late years, saying that none of them is an improvement over the old and tried methods. Diathermia and radium treatment are such dangerous measures that they should be applied only by experts, and not to the ear until they have been tried out on less important organs first. He insists that before such measures are commended for general adoption they should be given a more thorough and extended trials. Ways and means should be devised to prevent such hasty announcements in the lay papers of these incomplete scientific things, heralding them as assured salvation. This is occurring more and more every day, and it should be stopped. There can be no question that the sick are misled, disappointed, and actually harmed by such announcements made before things are ready to be announced, and the reputation of the profession suffers proportionately.

Medizinische Klinik, Berlin

January 18, X, No. 3, pp. 91-136

81 Mental Deficiency and Criminality in the Young; 371 Cases. (Geistesstörung und Kriminalität im Kindesalter.) J. *Raecke.*
82 Trachectomy. (Luftröhrenschnitt.) F. Baggerd.
83 Sunburn. (Sonnenbrand.) G. Scherber.
84 *Operative Treatment of Lockjaw of Traumatic and Inflammatory Origin. (Kieferklemme.) R. Ahrens.
85 Cyst at Vesical Mouth of Ureter. W. Kotzenberg.
86 Otogenous Abscess in Temporal Lobe. R. Leidler. Commenced in No. 1.
87 Dosage of Roentgen Rays. K. Stern.
88 Bergonié's Electric Treatment of Obesity. (Zur Therapie der Fettsucht.) O. Simmonds.
89 Experimental Asthma. E. Weber.

84. **Treatment of Lockjaw.**—Ahrens refers in particular to the inability to open the mouth resulting from cicatricial traumatic or inflammatory changes, and describes a case in which two operations were necessary to overcome the trouble. A shriveling process two years after the first operation had again immobilized the jaws. His experience in this and similar cases teaches that the best and most durable technic for the purpose is to cut through the ascending ramus of the lower jaw and interpose a flap of fascia tissue to prevent the parts growing together again.

Münchener medizinische Wochenschrift

January 20, LXI, No. 3, pp. 113-168

90 Radiotherapy in Gynecology. M. Henkel.
91 Radiotherapy in Cancer. (Primäre Ergebnisse der kombinierten Karzinombehandlung mit Mesothorium, Röntgenstrahlen und intravenösen Injektionen.) G. Klein.
92 Connective-Tissue Grafts. (Das kutane und subkutane [illegible] 'astisches Material.) E. Rehn.
93 * [illegible] Poliomyelitis. (Heine-Medinsche Krank- [illegible] 1 F. Rosenberg.
94 Serodiagnosis in Psychiatry. A. Fauser.
95 *Cure of Superficial Cancer with Salicylic Acid. Weinbrenner.
96 Durability of Solutions of Scopolamin. Beck.
97 Simplified Technic for Formaldehyd Sterilization. (Ueber die Tiefenwirkung von Formaldehyddämpfen in Dampfdesinfektionsapparaten mit und ohne Einwirkung verminderten Luftdruckes.) O. Mayer.
98 *Early Diagnosis of Measles. (Zur Frühdiagnose der Masern.) M. Grumann.
99 Technic for Radiotherapy. (Aeussere Kathodenstrahlen als Ersatz für Radium und Mesothorium.) H. Strebel.
100 Physical and Biologic Bases for Action of Radio-Active Substances. C. Müller.
101 Roentgen-Ray and Operation Findings with Pylorus Cancer. H. Reichel. Commenced in No. 2.

93. **Epidemic Poliomyelitis.**—Lust and Rosenberg state that they encountered between March and December, 1913, seventy-one cases of this disease at the dispensary at Heidelberg. This is the first time the disease has been epidemic in this region. Only four of the total patients were over 4 years of age. The cases were scattered over a wide region, thirty-two coming from different places where only one case had been observed; nine where there had been two cases; one place with four cases, and one with three. Investigation in regard to a preceding illness with tendency to paralysis, on the part of domestic animals and poultry revealed conditions of the kind in fourteen instances, mostly poultry, but also in two hares and one squirrel; in four fowls the paralysis was unmistakable, but it developed only on one side. Two of these fowls on separate farms had developed the paralysis three or four weeks before a child on the farm developed poliomyelitis. The two other hens came from districts where poliomyelitis occurred later. One of the hens was so com-

pletely paralyzed that it could move only by working itself forward on its belly. Histologic examination of this fowl showed a combination of neuritic, meningitic and encephalitic processes, but the spinal cord was apparently intact; the findings thus differed from those hitherto recorded in epidemic poliomyelitis in man, but the difference in species may well explain the pathologic-anatomic differences. Attempts to inoculate other fowls with tissues from these gave constantly negative results, as also attempts to inoculate them with human poliomyelitis tissue.

95. **Treatment of Superficial Cancer with Salicylic Acid.**—Weinbrenner has been applying salicylic acid systematically in nine cases of epithelial proliferation and states that all the patients are now entirely cured to all appearances. From two and a half to three months with the smaller growths up to eight months in the largest was the extent of the course of treatment. The crystals unite with the growth tissues to form a gray tenacious eschar which could be easily detached after two or three days, or, better yet, left to drop off spontaneously. The salicylic acid seems to destroy all the tissues that are pathologically inclined, down to sound tissue, only the vessels and cartilage displaying more resistance. The first application smarts for a few minutes, up to ten or fifteen with an extensive surface. Then the pains subside, but after eight or ten hours they return and may persist for twelve or twenty-four hours. The pain is less at the point of application than radiating, but the pains gradually grow less severe and shorter. He blows the pulverized salicylic acid into the depths of the growth, adding crystals of the acid to fill all the crevices, applying a strip of gauze to drain, and then covering with a dressing patted to fit tight on the lesion. Some of the illustrations taken before and after this treatment confirm the apparently complete cure.

98. **Early Diagnosis of Measles.**—It has not been Grumann's experience that Koplik's spots invariably accompany or precede measles, but he has always found in cases which proved to be measles later peculiar whitish efflorescences on the tonsils, punctate or linear, about 3 mm. long. He thinks these findings on the tonsils will be found a reliable sign and the earliest one of oncoming measles. It seems to be of the same nature as the Koplik spots, but the tendency is apparent first and sometimes exclusively on the tonsils.

Wiener klinische Wochenschrift, Vienna

January 8, XXVII, No. 2, pp. 21-40

102 *Acid Production and Nervous Over-Excitability. (Säure und Nervenerregbarkeit.) H. Elias.
103 Conservative Operation for Intermittent Hydronephrosis. Kroiss.
104 From the Balkan Wars. v. Massari and G. Kronenfels.
105 Celluloid Plate Worn in the Skull for Twenty Years. (Schädelheteroplastik mit Zelluloid.) L. Ruppert.
106 Effectual Action on Heart of Strophanthus Tincture by Inhalation. J. Moczulski.

102. **Acidosis and Overexcitability of the Nervous System.**—Elias discusses only the nutritional disturbances in infants accompanied by phenomena suggesting spasmophilia or tetany, and tetany in adults with pregnancy acidosis or starvation acidosis from obstruction of the pylorus. In these conditions, as also in a number of others which he enumerates, there seems to be an unmistakable connection between the acid intoxication and the excessive irritability of the nervous system. Experiments now under way on dogs establish apparently beyond question this connection between oversaturation of the organism with acid and the development of symptoms and reactions showing abnormal excitability in the nervous system.

Zeitschrift für klinische Medizin, Berlin

LXXIX, Nos. 3-4, pp. 177-369. Last indexed Feb. 14, p. 582

107 *Differential Uric Acid Output in Chronic Arthritis. (Harnsäureausscheidung bei den chronischen nicht gichtischen Polyarthritiden.) M. Ljungdahl.
108 *Epinephrin Glycosuria in Man. A. Landau.
109 Action of Starch-Digesting Enzymes on Carbohydrates, etc. (Wirkung amylolytischer Fermente auf Nähr- und Nahrungsmittel.) H. Wolff and B. Rosumoff.
110 *Medicinal Treatment of High Blood-Pressure. K. Rutkewitsch.
111 Parallel Elimination of Uric Acid and Indican. (Das gleichmässige Ausscheiden der Harnsäure und des Indikans.) W. v. Moraczewski.
112 The Metabolism in Epilepsy. S. Kozlowski.
113 *Pernicious Anemia. O. Roth.
114 *Determination of Sugar Content of the Blood. (Zur Zuckerbestimmung im Blute.) G. Dorner.
115 *Hypertrophy of the Kidneys after Digitalis. E. Reinike.
116 *Influence of Calcium Chlorid on Diuresis with Chronic Nephritis. (Einfluss des Chlorkalziums auf die Diurese bei chronischer Nierenentzündung, nebst einem Beitrag über den Wasserstoffwechsel.) W. Arnoldi and G. Brückner.
117 *Latent and Masked Disease of Kidney Pelvis. (Nierenbeckenerkrankungen.) T. Hausmann.

107. **Type of Elimination of Uric Acid Not Characteristic.**—Ljungdahl reports the discouraging outcome of extensive research in twelve cases of chronic arthritis and a number of controls, all showing that it is impossible to determine solely from the type of elimination of uric acid whether the joint trouble is of a gouty nature or not.

108. **Epinephrin Glycosuria.**—Landau tabulates the findings in nine persons tested repeatedly by injection of epinephrin after ingestion of 150 gm. sugar. Glycosuria followed as a rule, but not when levulose instead of grape sugar had been taken. The sugar-producing and the diuretic action of epinephrin seem to be independent of each other. Small doses of cocain enhance the action of the epinephrin while pantopon checks it.

110. **Medicinal Treatment of Arteriosclerosis.**—Rutkewitsch gives the findings day by day over months in three typical cases and summarizes others, in all of which various drugs in vogue for the treatment of arteriosclerosis had been given a thorough trial. The results were disappointing. The reliance in arteriosclerosis must be on diet and physiotherapy, but, he adds, the connection between the high blood-pressure and certain glands with an internal secretion may yet point the way to effectual treatment.

113. **Pernicious Anemia.**—Roth relates a case of pernicious anemia in two adult brothers, a case of pernicious anemia accompanying cirrhosis of the liver, another in which the pernicious anemia accompanied tuberculosis in a woman of 48, and two cases in which pernicious anemia developed after 70. The list is closed with a case of pernicious anemia in a woman of 27 approaching term with her second pregnancy. After delivery she rapidly recuperated.

114. **Determination of Proportion of Sugar in the Blood.**—Dorner describes a modification of Pavy's technic which, he says, is extremely simple, requires only from 2 to 4 c.c. of blood and the simplest appliances, and with a sugar content of over 0.1 per cent. the findings are quite accurate. It is based on the reduction of a solution of cupric sulphate, but the cuprous oxid is not allowed to precipitate out but is held in solution by ammonia. The reaction reaches its height when the blue tint fades out entirely. This technic is useful for testing both blood and urine for sugar.

Two reagents are needed: Pavy I: 4,158 gm. purest cupric sulphate with water to 500. Pavy II: Potassium and sodium tartrate, 21 gm.; potassium hydroxid, 21 gm., and concentrated ammonia (specific gravity 0.88) 300 c.c. with water to 500 c.c.

In an Erlmeyer flask of 30 c.c. capacity are placed 1 c.c. of Pavy I and 2 c.c. of Pavy II; a bent tube through the cork carries off the ammonia fumes. The fluid to be tested is placed in a buret with glass cock, mounted on a glass tube projecting also through the cork of the flask and 2 cm. below. The fluid to be tested is turned into the flask at one gush, and the flask is brought to boiling for two or three minutes. One cubic centimeter of Pavy I is equivalent to 1.1 mg. sugar. This is divided by the figure representing the number of cubic centimeters of the blood filtrate used. Multiplying then by 1,000 gives the exact percentage. Example: 1 c.c. Pavy I = 1.1 sugar. About 2.7 of the blood filtrate was used, so the proportion is $\frac{1.1}{2.7} = 0.407$, which multiplied by 1,000 = 0.407 in 100 c.c.

115. **Hypertrophy of the Kidneys after Digitalis.**—Reinike reports experiments on healthy rabbits which demonstrated

that even in health the continued administration of digitalis led to enlargement not only of the heart but of the kidneys as well, although to a lesser extent, and also of the spleen.

116. **Diuretic Action of Calcium Chlorid in Chronic Nephritis.**—The metabolic findings in nine cases of nephritis are tabulated to show the unmistakable diuretic action of calcium chlorid in small doses in various forms of nephritis, especially those with edema and scanty, albuminous urine. The albuminuria was not affected in three cases, in five it was reduced, in none increased. Moderate intake of fluids, not over 26 c.c. per kilogram of body weight seemed to provide the most favorable conditions for the diuresis.

117. **Latent and Masked Pyelitis.**—Hausmann is convinced that pyelitis is far more common than generally recognized; it is particularly frequent in women. The pyelitis often causes atypical symptoms and is erroneously diagnosed as appendicitis, rheumatism, sciatica, abdominal-wall neuralgia, ulcer, hysteria, neurasthenia or catarrh of the bladder or intestines. The pyelitis may run its course without suppuration, the urine always limpid or with only scanty formed elements and no albumin. With kidney stones, red corpuscles may be the only abnormal finding in the urine; likewise with an albumin-free nephritis. Even a few red corpuscles in the urine should suggest serious trouble back of them (minimal bleeding, occult hemorrhage). A jelly-like sediment speaks for disease in the kidney pelvis, but cultivation of germs from the sediment of the urine is the most instructive measure at our command. Thirty-three cases are reported in detail to emphasize the necessity for suspecting trouble in the kidney pelvis in obscure cases. Pain on jarring the lumbar region and on pressure on the psoas, especially when the pain and tenderness occur on only one side, should attract attention to the kidney pelvis and prevent any egregious mistakes in diagnosis. It is sometimes possible to elicit the succussion pain with true nephritis. He strikes with the ulnar edge of his hand, striking with the base of the little finger of the right hand, directly across the lumbar region. The pain thus induced is what he calls the succussion pain as he strikes lightly, but still with some force. The direction of the stroke is from the outer edge of the back forward, so that the soft parts of the lumbar region are jarred—the latissimus dorsi. Under normal conditions the jarring causes no pain.

Zentralblatt für Chirurgie, Leipsic

January 24, XLI, No. 4, pp. 137-184

118 *Gastro-Duodenostomy for Duodenal Ulcer. H. Brun.
119 Experimental Research on Injection of Silver Salt into Kidney Pelvis. (Pyelographie.) E. Rehn.

118. **Gastroduodenostomy for Duodenal Ulcer.**—Brun gives an illustrated description of the simple technic with which he severs the connection between the stomach and duodenum in the upper wall of the gut, leaving the lower wall intact. The stump of the stomach is then brought down and sutured end-to-side to the duodenum while the sutured end of the stump of the duodenum projects above as a blind pouch containing the entire site of the ulcer. A slanting incision in the side permits the best access and oversight. When the ulceration is small, he does not cut the bowel across, but merely draws up into a peak the portion containing the ulcer, and then sutures the afferent and efferent portions of the loop together to form a solid mass projecting thus as a cap above the unobstructed part of the lumen below.

Zentralblatt für Gynäkologie, Leipsic

January 24, XXXVIII, No. 4, pp. 153-192

120 Ovarian Cyst Expelled from Rectum During Delivery. R. Michaelis.
121 *Temporary Exclusion of Kidney after Injury of Ureter. (Ausschaltung der Niere.) W. Stoeckel.
122 Danger of Bergonié's Electric Treatment Interrupting a Pregnancy. (Der Bergonié's Entfettungsstuhl als Abortivum.) M. Hirsch.
123 Determination from Without of Diameter of Internal Os During Delivery. (Eine Methode zur Bestimmung der Grösse des Muttermundes intra partum durch äussere Untersuchung.) F. Unterberger.
124 Danger of Tamponing with Placenta Praevia. E. Reinhardt.

121. **Temporary Exclusion of the Kidney.**—Stoeckel denounces as dangerous any attempt to implant the ureter in the intestine as this invariably leads to ascending infection. It is equally impracticable to implant the ureter in the sound mate as the technic is extremely difficult and in case of failure both ureters are then damaged. Attempts to patch out the ureter with a segment from another ureter or artificial tube have never proved successful in clinical cases. When the ureter has been injured in any way, there seems to be no resource therefore except to remove the kidney above. This is a hazardous operation when nothing is known with certainty in respect to the functioning of the other kidney. Consequently it is better to temporize for a while until more can be ascertained about this. His experiments on dogs have shown that it is feasible to cut the ureter and tie a complete knot in it above the ligature. The pressure on the loops of the knot is so great that no urine seeps through, and the stump can be confidently buried without fear of harm for a few days. The ureter above and the kidney become distended, but only gradually, and no permanent injury results within a reasonable period. In his experiments, chromocystoscopy gave normal findings when the knot in the ureter was untied by the fourth day. From this date onward functioning declined so that chromocystoscopy gave totally negative findings by the twenty-first day. With no other technic was the ureter impervious.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 3-7, pp. 25-72

125 *Indirect Palpation. (La palpazione mediata.) A. Campani.
126 *Albumin Reaction in the Sputum. P. Petralia.
127 Determination of the Viscosity of Effusions and Exudates. G. Malan.
128 Treatment after Prostatectomy. P. Marogna.
129 Sanitation in New Italian Colony in Africa. F. L. Comite.

125. **Indirect Palpation.**—Campani lays his right hand on the abdomen and palpates the abdominal organs through this hand, that is, the hand lying passively on the surface does the feeling while the other hand applies the force. Information can sometimes be obtained in this way beyond anything otherwise attainable.

126. **Albumin in the Sputum.**—Petralia's experience indicates that albumin is found in the sputum in case of congestion and inflammation in the air passages, most pronounced with the latter, and subsiding as the inflammation retrogresses. In 101 cases he found it then a valuable guide for the prognosis. In the tuberculous bronchitis cases, the proportion of albumin ranged from 2 to 4.5 per thousand, while in the non-tuberculous cases the proportion was far less as a rule, although in a few exceptional cases 4 per thousand was found with nothing otherwise to indicate tuberculosis.

Policlinico, Rome

January, XXI, Medical Section No. 1, pp. 1-48

130 Syphilitic Meningomyelitis with Necropsy. P. Ciuffini.
131 The Wassermann Reaction in Syphilis. L. Philippson.
132 Behavior of the Leukocytes in Pernicious Anemia. P. Sisto. To be continued.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

II, No. 17, pp. 1443-1518

133 *Renal Diabetes. C. D. de Langen.
134 The Action of Ferments is a Vital Process B. C. P. Jansen.

No. 18, pp. 1519-1598

135 Operative Treatment of Suppurative Peritonitis. (Chirurgische behandeling van etterige buikvliesonsteking) S. M. Kropveld.

133. **Renal Diabetes.**—This article discusses that form of diabetes in which the pathogenesis must be sought in the kidney instead of elsewhere. The Holland literature of recent years does not contain anything on this subject, but de Langen reports a case in detail from his own experience. He found the least glycosuria not on a carbohydrate-free diet but on a liberal carbohydrate diet. The day urine gave the highest amount of sugar. Absolute rest and a strict milk diet did not cause change, neither did exercise have any influence. The sugar content was thus independent of the carbohydrate supply. Food had no influence on the proportion of sugar

in the blood; the proportion was subnormal. No symptoms of nephritis were evident. The toleration in regard to the carbohydrate diet has kept up unmodified during the year to date. Klemperer has asserted that renal diabetes can appear in cases of senile arteriosclerosis, and de Langen has encountered a case of this kind. He thinks it now established that certain pathologic conditions in the kidneys may interfere with the elimination of sugar. Abnormal permeability of the kidneys to sugar, etc., is evidenced in phlorizin diabetes and perhaps other toxigenic glycosurias. The existence of a clinical renal diabetes cannot be denied; it differs naturally from diabetes mellitus in cause, course and prognosis.

Meditsinskoe Obozrienie, Moscow

LXXX, No. 15, pp. 287-374

136 Success of Serotherapy in Tetanus; Two Cases. V. N. Vinogradoff and S. I. Kiriltseff.
137 Inoculation of the Eyelids with Vaccinia. (Privivka ospi i zabolievanie glaz.) P. Tchistiakoff.
138 Serodiagnosis by Abderhalden's Methods. B. F. Kabanoff.
139 Diphtheria Bacilli Carriers. (O Nositeliak D. palotchek.) N. I. Uspensky.
140 Osteosarcoma of the Shoulder; Two Cases with Successful Operative Treatment. V. A. Perimoff.
141 Method of Determining the Coagulability of the Blood. P. P. Sitkovsky.

No. 16, pp. 375-464

142 Electrocardiography. A. M. Kastanaian.
143 Extra-Uterine Pregnancy. N. Marianchik.
144 The Alquié–Alexander Operation for Retrodisplacement of the Uterus. P. Kuzmin.

No. 17, pp. 465-552

145 *Keratin in Treatment of Cirrhosis of the Liver. S. Zypkin.
146 History of Medicine in Russia. III. A. Levintsky.

145. **Keratin in Treatment of Cirrhosis of the Liver.**—Zypkin reports four cases of cirrhosis of the liver (one due to cardiac disturbances, the three others examples of Laennec's cirrhosis), in which he successfully applied keratin in treatment. He begins the treatment with caffein (0.2 gm. three times a day) which is given for three or four weeks, for the purpose of improving the portal circulation. Then keratin is given in addition to the caffein, in the form of 0.5 gm. tablets. Five such tablets are given daily. If diarrhea sets in, 0.5 gm. tablets of salicylate of bismuth are given three to five times a day. The treatment is kept up for months, in one case it was given for thirteen months. The by-effects are nil, the results excellent. Thus the ascites which had to be tapped did not recur, the general condition improved remarkably and the diuresis increased. Zypkin considers keratin a safe antisclerotic remedy.

St. Petersburger medizinische Zeitschrift

January 14, XXXIX, No. 1, pp. 1-13

147 Leprosy. A. v. Bergmann.
148 Tuberculous Intrathoracic Lymph-Nodes. P. Mende.
149 Alienist Testimony in the Courts. (Psychiatrische Gutachten vor Gericht.) C. Siebert.
150 Expulsion of Lining of Esophagus after Drinking Acetic Acid. (Fall von Oesophagitis dissecans.) M. Gesselewitsch.

Brazil-Medico, Rio de Janeiro

December 22, XXVII, No. 48, pp. 520-527

151 Treatment of Gonorrheal Urethral Stricture. (Tratamento dos estreitamentos blennorrhagicos da urethra no homen.) A. Pereira. Commenced in No. 47.

Semana Medica, Buenos Aires

December 18, XX, No. 51, pp. 1473-1556

152 *Pulmonary Influenza. (Congestion pulmonar doble; Bacilo de Pfeiffer y micrococcus catarrhalis.) C. P. Mayer.

December 25, No. 52, pp. 1557-1620

153 Vaccine Therapy of Typhoid; Six Cases. (Vacunoterapia o antigenoterapia antitifica.) F. R. Torres.
154 *Emetin in Treatment of Hemoptysis. P. A. Guerrero.
155 Vaccine Therapy for Alcoholism. (La seroterapia antietilica.) V. Delfino.
156 *The Diet Factor in Estimation of Renal Function. (La prueba de los proteicos en la exploracion de las funciones renales.) N. Serrallach.

152. **Pulmonary Influenza.**—Mayer states that the diagnosis in the case described wavered between miliary tuberculosis and pneumonic plague as the intense dyspnea, high fever and cyanosis—with nothing to explain the cyanosis on the part of the heart—were accompanied by signs of severe congestion of both lungs and notable enlargement of the spleen. The patient was a man of 28 and the general condition did not seem much depressed by the two weeks the symptoms had lasted. The bacteriologic blood findings were negative and there was no expectoration, but the influenza bacillus and the *Micrococcus catarrhalis* were found in the saliva. Mayer regards their symbiosis as responsible for the syndrome observed. On suspicion of tuberculosis a course of tuberculin treatment was started, but the syndrome rapidly improved, the lungs cleared up, and no traces of the trouble were left by the end of thirty days from the onset of symptoms. The improvement could not be attributed to the tuberculin treatment as there is no instance on record of its having such a prompt and complete curative influence on a pulmonary process of any character.

154. **Emetin for Hemoptysis.**—Guerrero has found twenty cases on record in which emetin was given to arrest a tendency to hemoptysis, with good effects alleged in all. He has applied it in eight cases, but his experience was not so favorable as those cited. He found that two or three injections were necessary and larger doses. The dose advocated by Flandin and Joltrain is 0.04 gm. but he found that 0.05 or 0.06 gm. was none too much, and thinks that even larger doses than this could be used to advantage. The effect is not immediate, and does not seem to be definite. His patients were all in the second or third stage of tuberculosis as he did not apply the emetin in the first stage, hemoptysis in this phase of the disease generally subsiding spontaneously. He made up to ten injections in some of the cases without absolute control of the tendency to hemorrhage.

156. **Importance of the Diet in Testing Kidney Functioning.**—Serrallach gives figures from several case histories to sustain his assertion that the various tests for kidney functioning give entirely different results after three or four days of an exclusively carbohydrate diet or a protein diet. He makes a point of enforcing a period of one and then of the other, comparing the findings with the different tests during the two periods. The urea content of the blood is particularly instructive under these conditions. The experimental polyuria test and the test for elimination of salt are valuable aids, but he does not ascribe much value to chromocystoscopy, the methylene blue or the phlorizin tests.

Hospitalstidende, Copenhagen

January 21, LVII, No. 3, pp. 65-96

157 *Familial Syphilis with Parenchymatous Keratitis. H. Boas and H. Rønne.
158 Retrograde Incarceration; Two Cases. H. v. Thun.

157. **Familial Syphilis.**—Boas and Rønne here tabulate under various headings the findings in regard to the manifest signs of syphilis, the Wassermann reaction, the apparently healthy members and the deaths or abortions in 33 families in which one or more of the children had parenchymatous keratitis. There were 19 among the parents and 39 among the children with manifest signs of the disease, 11 and 8 with a positive Wassermann as the only manifestation, and 15 among the parents and 27 among the children apparently free from all taint. Analysis of the various families impresses the necessity for examining the brothers and sisters of children with parenchymatous keratitis. Even when the former are apparently entirely healthy, yet they may give a positive Wassermann reaction, showing that they may need treatment. The inheritance in syphilitic families is liable to be more irregular than has hitherto been deemed possible, as after a long series of healthy children others may be born with pronounced indications of the infection.

Hygiea, Stockholm

January, LXXVI, No. 1, pp. 1-80

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A SCALE, BASED ON THE WORK AT ELLIS ISLAND, FOR ESTIMATING MENTAL DEFECT

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From different sources have come many requests for a description of the tests worked out and conclusions reached in the practical work that has been done at Ellis Island on mental defectives. For this reason I present this paper, based on tests which I have made on over 4,000 suspected defectives in the last eighteen months and many more made by my associates. It must be remembered that our cases were suspected of being deficient and were therefore not representative of the normal, although all were considered sufficiently near the required standard to be allowed to pass, except about 400 certified as feeble-minded and (in a few cases) as imbeciles. The tests, questions and other details of examination were arrived at as a result of work on persons that were less bright than the average of the various races (illiterates) from which they came. It is evident, therefore, that if this scale errs at all it is on the conservative side and that anyone tested by it receives more than fair treatment. Some may be interested to know that the sole work of one officer of the Public Health Service at present is to find the limitations of normal illiterate aliens—just what they can and cannot do. It is possible, then, that some more severe tests, which will be more in keeping with the actual capabilities of the persons on whom they are to be tried, will be added to those in present use. Some of the questions used by us which appear in the following standard of tests were taken from the questionnaire of the psychologist, Binet, to whom we are indebted.

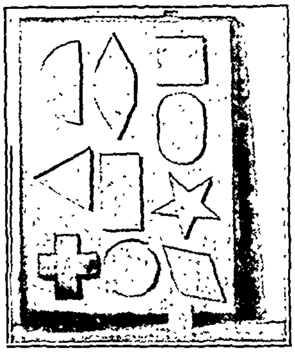

Fig. 1.—Seguin's form-board, 16 by 22 inches in area, 1½ inches thick and made of soft wood. The pieces are 1 inch thick and are set into sockets ½ inch deep, therefore they project out of the board ½ inch. The time, and especially the improvement time, is most important in working with this board.

A SCALE FOR THE ESTIMATION OF THE DEGREE OF MENTAL DEFICIENCY IN ILLITERATES AND OTHERS

Tests applicable to the first two years of life have not yet been fully worked out by us. The child should:

At 3 Years

1. Recognize toys and simple objects.
2. Point to ear, nose or lips.
3. Repeat two figures, as 7, 5.
4. Recognize objects in child picture-books with which it is familiar.
5. Know own name.

At 4 Years

1. Put in some of the pieces in Seguin's form-board (Fig. 1).
2. Do line *a* of cube imitation test or touch any two blocks (Fig. 2).
3. Repeat three figures as 7, 9, 5.
4. Recognize ring, pencil, shoe, hat.
5. Know own sex.

At 5 Years

1. Put all the pieces in Seguin's board in three minutes (Fig. 1).
2. Do line *b* of the cube test or touch any three blocks (Fig. 2).
3. Count any number of the examiner's fingers.
4. Copy a square and circle.
5. Obey two commands as "Shut the door and hand me the pencil."

At 6 Years

1. Do "imbecile test" in five minutes with less than six mistakes (Fig. 3).
2. Do line *c* of the cube test (Fig. 2).
3. Build structure with four blocks after seeing the same structure twenty-five seconds.
4. Know right or left hand or ear.
5. Know own age.
6. Obey three commands, "Open door, shut window and bring book."
7. Know purpose of domestic animals that are familiar.

At 7 Years

1. Do "geographical" test, after being shown, in five minutes (Fig. 4).
2. Do "imbecile" test with more facility than at 6 years of age (Fig. 3).
3. Imitate construction-block structure, using five blocks.
4. Copy a diamond with a lead-pencil.
5. Repeat four figures, as 9, 3, 7, 4.
6. Count readily from 1 to 20.
7. Name the action shown in simple picture: as "driving horses."

At 8 Years

1. Do five-block frame test (Healy's) in five minutes (Fig. 5).
2. Do line *d* of the cube test (Fig. 2).
3. Count from 20 to 1 with not over two errors.
4. Know the difference between water and milk, horse and cow, if familiar.
5. Repeat five figures, as 7, 3, 5, 9, 2.
6. Recognize primary colors, red, blue, green and yellow.

At 9 Years

1. Do diamond-frame test in five or ten minutes (Fig. 5).
2. Put cut-out sections into horse picture in five minutes (Fig. 6).
3. Put pieces into Seguin's board in twenty seconds (Fig. 1).
4. Know the date.
5. Name the days of the week and tell the time approximately.
6. Arrange five cubes of the same color and size, weighing 9, 12, 15, 18 and 21 gm., in the order of their weights.

At 10 Years

1. Do "moron" test inside of ten minutes (Fig. 7).
2. Perform the details of the "visual comparison" test (see *New York Med. Jour.*, Sept. 13, 1913, p. 522).

3. Name the months of the year.
4. Do simple addition of like followed by unlike numbers, as: 6 and 6 = ? 6 and 5 = ? 5 and 5 = ? 5 and 4 = ? up to and including 8 and 8 = ? 8 and 7 = ?
5. Do simple addition of two numbers, one of which is increased each time by 1, as: 7 and 1 = ? 7 and 2 = ? 7 and 3 = ? 7 and 4 = ? 7 and 5 = ? etc., to 7 and 8 = ?
6. Name the days of the week backward.

At 11 Years

1. Do *c* line of cube test without being shown over five times (Fig. 2).
2. Repeat six figures, as: 6, 9, 2, 5, 7, 3.

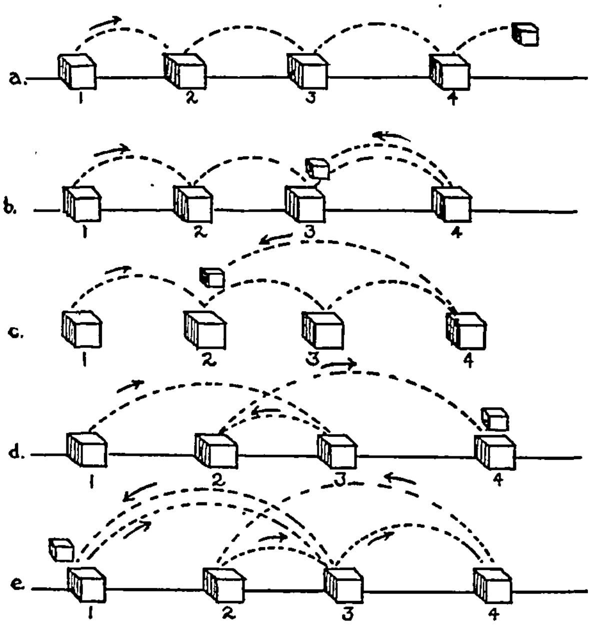

Fig. 2.—Knox's cube imitation test. Four 1-inch cubes, 4 inches apart, are fastened to a piece of thin boarding. The movements and tapping are done with a smaller cube. The operator moves the cube from left to right facing the subject, and after completing each movement, the latter is asked to do likewise. Line *a* is tried first, then *b*, and so on to *c*. Three trials are given if necessary on lines *a*, *b*, *c* and *d*, and five trials if needed on line *c*. To obtain the correct perspective the subject should be two feet from the cubes. The movements of the operator should be slow and deliberate.

3. Of a simple story of five details remember at least three.
4. Tell difference between ice and glass, the feet of horses, cows and dogs, or other objects chosen from the subject's experience.
5. Give an intelligent account of occupation for the past year.
6. Concrete subtraction of simple numbers from 10, as 10 eggs — 3 eggs = ?

At 12 Years

1. Do "casuist" test in five minutes with sensible mistakes if any (Fig. 8).
2. See absurdities, as: "A man walked down the street swinging a cane with his hands in his pocket." "Man cut into ten pieces, suicide?"
3. Syllogisms, as: "I am taller than my brother and my brother is taller than my father. Which of us is the tallest?"
4. Story solution, as: "A man was walking in the woods and he saw something hanging from a tree that frightened him; he ran back to the village and told the police. What did he see?"
5. Concrete subtraction of simple numbers from 20; as 20 cents less 4 = ?.
6. Divide twenty apples into four equal parcels; how many will be in each?

At from 13 Years Onward

1. Do "feature profile" test in ten minutes (Fig. 9).
2. The picture of a ship pasted to a board and cut into ten equal-sized pieces of the same shape, should be properly assembled in ten minutes. The pieces are all cut vertically and parallel to each other (Glück).
3. Obey four commands.
4. Problem: "My head is to my hat as my hands are to my ———?" (gloves).
5. Define justice, pity, truth, goodness and happiness.
6. Combine factors in concrete addition, as: 1 horse and 1 man have how many legs? 1 horse and 1 man and 1 chicken? 2 horses and 1 man and 2 chickens?

MAKE-UP TESTS FOR ADULTS

These are to be used on those who, judged by the preceding tests, are subnormal, but not less than 7 years old mentally.

1. Put the four pieces into Gwyn's "triangle" three times in forty-five seconds (*A*, Fig. 10).
2. Put the pieces into Kempf's "diagonal" inside of three minutes (*B*, Fig. 10).
3. Put the pieces into the Fernald board inside of five minutes (*C*, Fig. 10).
4. Count 60 dots, each about ⅛ inch in diameter, arranged in ten parallel lines.
5. Give an intelligent and connected account of the technicalities of the previous occupation.
6. Permit the subject to choose a topic about which he says he is familiar and allow him to discourse on it at length. (If this is done well and the subject uses more than fifty words in his description the examiner should be particularly sure of his ground before certifying the case.)
7. The ink-blot imagination test. (Soon to appear in *Medical Record*.)

This entire examination presupposes that the subject has never been taught and that he has only acquired knowledge by the experiences of every-day life. The performance tests especially are not dependent on any previous experience, but the ability to do them is based on the inherent or native power to surmount slight obstacles with which the subject is born and they are applicable to the educated as well as to the illiterate. The power itself is based on reasoning, judgment, sense of form, perseverance, attention and cooperation, nearly all of which are essential to success in life.

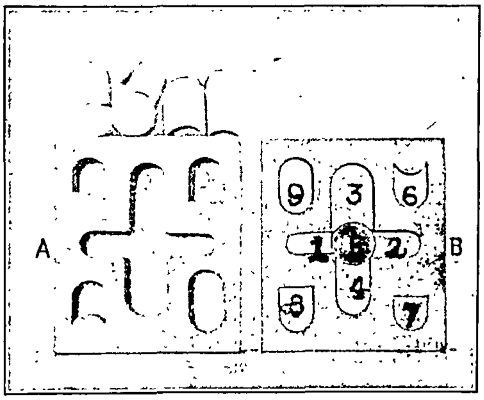

Fig. 3.—Knox's "imbecile" test. Board is 5 by 7, and 1 inch thick with a ⅛-inch wooden back to prevent the pieces from falling through. The test is made of hard wood and the pieces fit easily. Sections 4, 6, 7, 8 and 9 are all of the same width. A fraction method of scoring is in use, each piece being numbered. *A*, sections out; *B*, sections in place as they appear after the correct performance of the test.

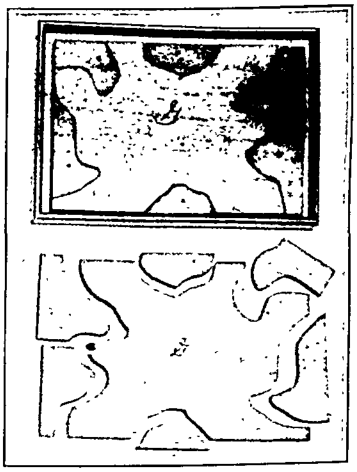

Fig. 4.—The "geographical" or jig-saw test. Pieces are ¼ inch thick and of hard wood. It is kept in a shallow box when not in use to prevent the loss of the sections. The fraction method of scoring is used here, each piece being numbered. Time and improvement time are recorded.

For scientific purposes and for the sake of certain fairness to the alien, some of us use, unofficially, the following method of grading:

Age At or Over	Mental Development Years	Classification
6	Practically none	Low-grade idiots
6	1	High-grade idiots
8	2	Low-grade imbeciles
10	2 to 4	Middle-grade imbeciles
12	4 to 6	High-grade imbeciles
12	6 to 8	Low-grade morons
14	8 to 10	High-grade morons

By reducing the higher ratios of physical to mental years by a process of simple proportion, one may more correctly grade the younger cases and will not, for example, rate a child of 6 who does the 3-year requirements, as the middle-grade imbecile which, on casual consideration, he might seem to be. This is done as follows: Take one of the seven primary classes in the preceding tests, for instance, No. 6, and make a proportion with the child's age and x as, $12:7::6:x$; thus $x =$ the mentality of 3½ years. Therefore a child of 6 who does the 3-year requirements is approximately a low-grade moron and not a middle-grade imbecile.

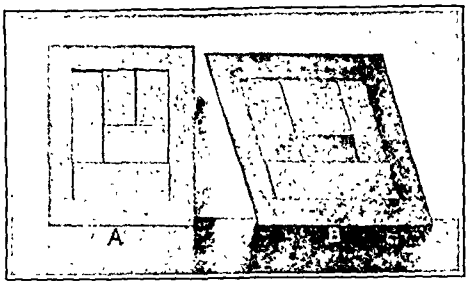

Fig. 5.—*A*, Healy's five-block frame test. Frame is 4 by 5 by ¼ inches and is of hard wood. The test must be made accurately to scale as shown here, else it will lose some of its usefulness; the blocks should be out of the frame when the subject first sees and attempts it. *B*, Knox's "diamond" frame test. It measures 5 inches on each side, is 1 inch thick, and is made of hard wood with a cloth or wooden back. The six sections are cut on the "bias." Time and improvement time are the important elements here; no scoring has been attempted.

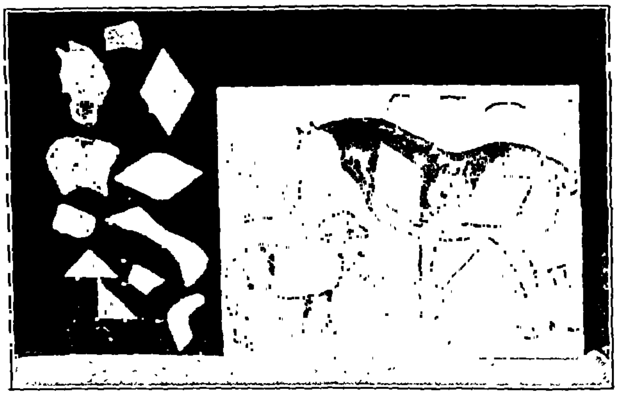

Fig. 6.—The horse picture used by Dr. Gwyn of the Public Health Service (before this by Healy) in his original investigations with defective aliens. It consists of a picture from a child's book, 8 by 10 inches, pasted on a piece of boarding ¼ inch thick with sections cut out as shown. The most difficult part of the test is the filling of the space occupied by the two right-angled triangles. There should be a wooden back on the test to prevent the pieces from falling through.

For the purpose of classification the scale and method of grading or classifying which is here given may be used exactly as it stands, but in handling defectives from a legal point of view conservatism must always be the watchword; in short, the examiner must be certain that the subject has actually reached his upper limit of ability and then leave a margin for possible improvement at a later examination if it should be necessary to make one. Lay people are often willing to believe that an unprepossessing person is defective, while one of equal intellect, pleasant expression and regular features might be considered normal by them. Looks are certainly deceiving when one is attempting to diagnose deficiency; (1) some who look bright are in reality defective; (2) some who look defective are so, and (3) some who look defective prove on examination to be of normal intelligence. When one goes above the imbecile grades he has gone beyond the point at which there is a distinct and more or less pathognomonic physiognomy. It is therefore necessary to obtain the mental content by tests and questions, and in no case can one say of a bright and handsome person, "that man has a normal mind." The one characteristic that I have seen more often than any other among defectives, as regards their faces, has been asymmetry, which of course is not at all uncommon among normals.

In grading defectives by the scale it is not always an advantage to begin at the beginning. It is just as well to start from the point at which, in the examiner's estimation, the subject can accomplish something; if he fail there, go lower on the scale; if not, go higher until his limit has been reached. When it seems that the subject has reached his limit select isolated questions from the higher years and credit him a point for each one that he meets successfully. If now he has not reached the normal standard for his age and the examiner still has doubt that his subject is defective, he may hold him for further examination on another day, at which time, in the case of 12-year-olds or those younger, or in the make-up tests when the subject is over 12 and according to the scale not below 7 mentally, the same tests may be given. If he were lower than this he could not possibly meet the make-up requirements. If an adult meets the make-up requirements it shows that he has profited by his experience, and if, when he is given the make-up tests repeatedly, he improves by performing them in a shorter length of time at each trial, it shows rather conclusively that the poor performance at the first sitting was due to physiologic emotional causes and he should therefore be given the benefit of the doubt. An isolated instance may be taken for illustration.

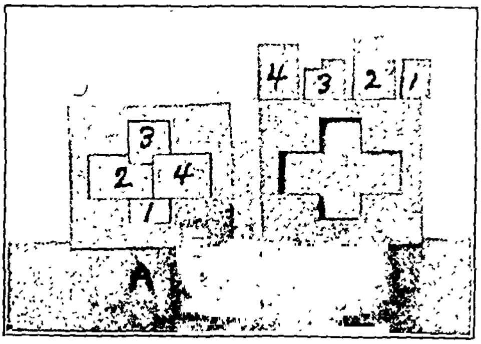

Fig. 7.—Knox's "moron" test. It is of wood and is 4½ by 4¾ inches with a wooden back. The four blocks fit easily and smoothly into the frame. The test should not be assembled when the alien first sees it and he should be made to do it three times in order to rule out the element of accident and to note the improvement time. *A*, assembled; *B*, with pieces out.

A fairly normal-looking illiterate alien, aged 20, was selected from the first line-inspection because he added simple numbers poorly; in the primary examination or "*sifting*" *room it was found that he was unable to perform the d* line of the cube test and that while he could count forward from 1 to 20, he could not count from 20 to 1. He was accordingly detained and a secondary examination card bearing the result of the first test was made out for him. On the following day he was brought to the secondary examination room (or psychologic laboratory) and was tested by the illiterate scale. It was *found that he could do all the 7-year requirements, only* one (No. 6) of the 8-year elements, No. 5 of the 9-year elements, Nos. 2 and 3 of the 10-year requirements and No. 6 of the 11-year requirements. Now since there are six elements in the year above the one he did successfully, and he did without error five of the requirements of various years above the 7-year tests, he was rated as $7\,{}^{5}/_{6}$ years mentally by the illiterate scale.

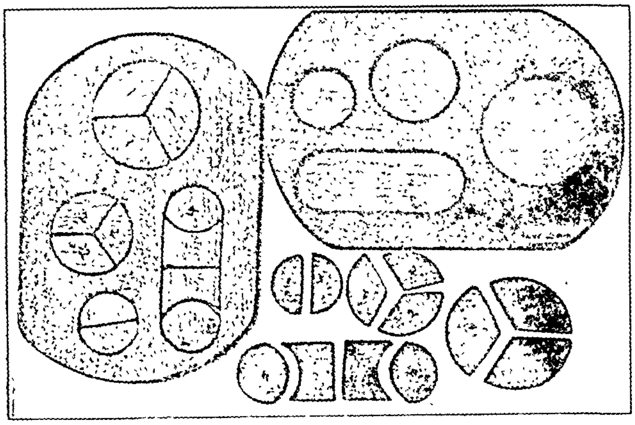

Fig. 8.—Knox's "casuist" test. The frame is 13 by 10 by ½ inches and is made of hard wood. It consists of twelve pieces that fit into the solid wood frame which has a wooden back. Each piece is numbered so that the fraction system of scoring may be used The numerator of the fraction indicates the piece misplaced and the denominator the space (numbered like the piece that belongs in it) into which it was erroneously placed; roman numerals to the right of the fraction indicate the number of times the mistake was repeated For instance, if one of the "3's" is put into one of the "4" spaces four times this fact would be recorded thus, ¾ III; if a section as "5" is in its correct receptacle, but with faces reversed, this fact is recorded as 5—, if turned sideways, 5′. Time and improvement time are accurately recorded by a stop watch. The most important thing to consider when using this test is the character of the mistakes made, whether absurd or "sensible." Note that the sections numbered 4 are neither circular nor semicircular in outline but that the two faces of each of these pieces form arcs of different-sized circles. A rubber stamp outline of the test is used by some to record mistakes graphically.

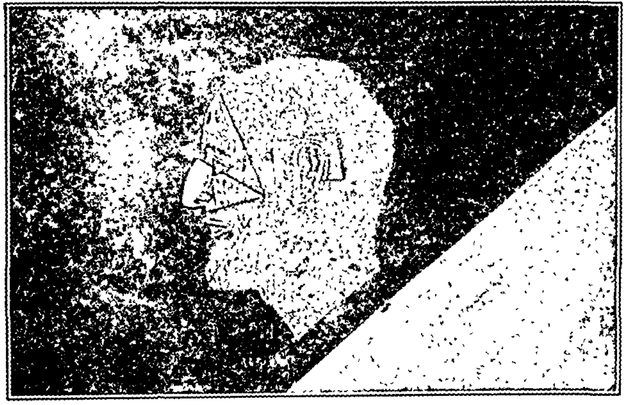

Fig. 9.—The "feature profile" test. This is a profile head, made of hard wood, ½ inch thick and about 6 by 10 inches in its greatest measurement. There are seven pieces exclusive of the main piece, the eye, nose and mouth each comprise one section, and the ear is made up of four sections which can be placed in only one way to make a complete ear. The test presupposes the ability to read a diagram and it is therefore more difficult than at first appears. The test should not be assembled when the subject first sees it. It is our highest and most difficult performance test and yet it is eminently fair because every one has seen a human head; the subjects are told "this is a head." (This test was devised by Dr. Kempf of the Public Health Service and myself.)

On the following day he was examined again and at that time he only accomplished one of the elements that he failed on before, and that was No. 3 of the 8-year elements; of the make-up tests he succeeded in doing only No. 1. This alien was certified by us as "feebleminded" and was deported by the Immigration Department. The fact that he was actually 20 years old and passed, at first, the $7\,{}^{5}/_{6}$-year requirements and later two more elements from the higher ages, making him finally $8\,{}^{1}/_{6}$ years mentally, would permit him to come under the scientific (not legal) classification of high-grade moron. He would be low in this grade, however, since the requirements are that the one so classed must be actually 14 years or older and from 8 to 10 mentally.

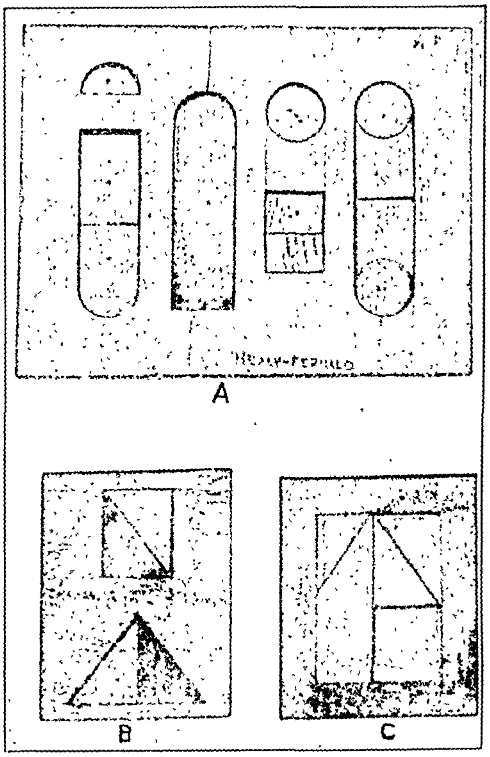

Fig. 10.—The three performance-tests used in the "make-up tests" for adults. *A*, the Fernald board; *B*, Gwyn's triangle; *C*, Kempf's diagonal. The principles underlying these tests are, in general, the same as those on which our other wooden performance-tests are based. Scoring may be by a rubber stamp by which a miniature impression is made of the assembled test, each piece being numbered, and all the pieces exactly alike, such as the circular pieces in the Fernald board, being numbered alike. The fraction method answers as well. To show the method used by the subject, write in space in which it was placed the number of misplaced pieces and the number of its misplacements. Special signs may be devised by the operator to fit each indication.

To illustrate the other possibility in the case, let us suppose that the alien passed the tests as he did up to the conclusion of the first secondary examination when he was found to be $7\,{}^{5}/_{6}$ years mentally, but on his second and last secondary examination he had done all the 8-year elements and perhaps three or four of the make-up tests with some degree of facility. In such a case we would in all probability have allowed the alien to enter as somewhat defective, but too bright to certify for legal purposes as a deficient. This latter is what is meant by "giving the alien the benefit of the doubt."

Practical experience has shown that in the examination of suspects in the primary sifting-room, after the line inspection, tests must be selected from the scale that would ordinarily be easily accomplished by 8- to 10-year-old normals. This simplicity of the tests offsets the mental stress that will always be inevitable under such circumstances. The tests that have proved of the most value for adults in this sifting process are elements 1, 2 and 3 (Healy frame test, *d* line of cube test and counting from 20 to 1) of the 8-year requirements and 4 and 5 of the 10-year requirements, which consist of simple addition.

The following cases are the recorded ones on which this scale for illiterates is based, and constant reference to the scale is necessary to see just how many could or could not do the various things expected of them. It will be seen for instance that not all the 3-year-olds did all of the 3-year requirements, or rather, not all were asked to do them, therefore the number of children doing the first element differs from the number doing

TABLE 1.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 3

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	24	1	0	20	4
Hebrew	16	1	0	16	0
Polish	31	1	3	21	7
Russian	23	1	5	17	1
Italian	24	2	3	17	4
Hebrew	29	2	0	29	0
Polish	16	2	5	4	7
Russian	21	2	7	10	4
Italian	17	3	1	16	0
Hebrew	9	3	0	9	0
Polish	17	3	6	11	0
Russian	9	3	3	6	0
Italian	13	4	0	13	0
Hebrew	6	4	1	5	0
Polish	9	4	1	8	0
Russian	11	4	2	9	0
Italian	34	5	1	33	0
Hebrew	20	5	0	20	0
Polish	12	5	1	11	0
Russian	18	5	2	16	0

TABLE 2.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 4

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	30	1	7	23	0
Hebrew	26	1	4	22	0
Polish	17	1	6	11	0
Russian	14	1	4	10	0
Italian	24	2	2	20	2
Hebrew	18	2	0	14	4
Polish	12	2	2	8	2
Russian	16	2	1	11	4
Italian	6	3	1	4	1
Hebrew	8	3	2	4	2
Polish	7	3	2	2	3
Russian	5	3	1	3	1
Italian	61	4	9	52	0
Hebrew	42	4	6	36	0
Polish	25	4	12	13	0
Russian	24	4	11	13	0
Italian	37	5	0	37	0
Hebrew	19	5	1	18	0
Polish	14	5	3	11	0
Russian	7	5	2	5	0

TABLE 3.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 5

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	61	1	21	32	8
Hebrew	42	1	9	26	7
Polish	8	1	1	7	0
Russian	12	1	2	6	4
Italian	74	2	13	52	9
Hebrew	33	2	1	27	5
Polish	21	2	1	13	7
Russian	14	2	3	6	5
Italian	48	3	3	45	0
Hebrew	15	3	0	15	0
Polish	12	3	3	9	0
Russian	9	3	1	8	0
Italian	4	4	1	3	0
Hebrew	9	4	2	7	0
Polish	5	4	0	5	0
Russian	1	4	0	1	0
Italian	12	5	3	9	0
Hebrew	6	5	1	4	1
Polish	4	5	0	3	1
Russian	3	5	1	1	1

TABLE 4.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 6

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	48	1	5	8	35
Hebrew	27	1	3	14	10
Polish	39	1	9	20	10
Russian	24	1	4	12	8
Italian	54	2	13	41	0
Hebrew	38	2	7	23	8
Polish	24	2	2	11	5
Russian	31	2	5	25	1
Italian	12	3	2	9	1
Hebrew	4	3	1	2	1
Polish	7	3	0	7	0
Russian	0	3	0	0	0
Italian	72	4	7	65	0
Hebrew	43	4	8	35	0
Polish	24	4	5	19	0
Russian	21	4	3	18	0
Italian	71	5	11	60	0
Hebrew	42	5	8	34	0
Polish	35	5	7	28	0
Russian	18	5	2	16	0
Italian	9	6	2	4	3
Hebrew	5	6	1	3	1
Polish	3	6	1	2	0
Russian	6	6	3	1	2
Italian	14	7	1	5	8
Hebrew	6	7	0	4	2
Polish	14	7	2	9	3
Russian	9	7	1	7	1

TABLE 5.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 7

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	20	1	2	13	5
Hebrew	11	1	0	5	6
Polish	9	1	2	7	0
Russian	3	1	0	2	1
Italian	71	2	4	66	1
Hebrew	40	2	1	35	4
Polish	17	2	3	7	7
Russian	9	2	2	7	0
Italian	10	3	1	7	2
Hebrew	8	3	3	4	1
Polish	1	3	0	1	0
Russian	7	3	2	3	2
Italian	26	4	5	7	14
Hebrew	18	4	3	4	11
Polish	21	4	5	3	13
Russian	16	4	7	1	8
Italian	29	5	12	9	8
Hebrew	32	5	5	23	4
Polish	12	5	6	1	5
Russian	7	5	1	2	4
Italian	78	6	2	67	9
Hebrew	47	6	0	42	5
Polish	76	6	1	69	6
Russian	40	6	3	30	7
Italian	74	7	5	60	9
Hebrew	61	7	2	52	7
Polish	8	7	1	1	6
Russian	15	7	1	4	10

TABLE 6.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 8

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	65	1	12	45	8
Hebrew	54	1	7	33	14
Polish	46	1	9	21	16
Russian	28	1	15	12	11
Italian	48	2	11	3	34
Hebrew	31	2	13	8	10
Polish	24	2	6	4	14
Russian	27	2	14	7	6
Italian	42	3	15	12	15
Hebrew	16	3	3	6	7
Polish	14	3	1	13	0
Russian	11	3	4	7	0
Italian	31	4	2	22	7
Hebrew	20	4	4	12	4
Polish	6	4	1	4	1
Russian	19	4	3	10	6
Italian	9	5	1	6	2
Hebrew	11	5	2	9	0
Polish	6	5	0	5	1
Russian	10	5	3	4	3
Italian	9	6	3	6	0
Hebrew	7	6	2	5	0
Polish	1	6	0	1	0
Russian	9	6	2	7	0

the second element. This result was because it was not foreseen when the work was begun that a measuring scale would be developed. To make the accompanying tables clear, the first section of the table of 3-year olds will be explained in some detail. All the children comprised in this section were Italians, Hebrews, Poles and Russians aged 3, that is, between their third and fourth birthdays. "El" in the heading refers to the element in the scale on which the stated number of children were tested; for instance, twenty-four 3-year-old Italians were tested in the recognition of toys or other simple commonplace objects (No. 1 of the 3-year requirements in the scale). Twenty recognized them, four did so with some difficulty and none failed altogether. On reference to the scale it will be seen that Element 2 of the 3-year test, requires the child to be able, at command, to point to his ear, nose or lips; Element 3, to repeat two figures after the examiner. This follows through the various elements and years of the scale.

TABLE 7.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 9

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	21	1	3	11	7
Hebrew	13	1	5	4	4
Polish	16	1	2	9	5
Russian	12	1	0	5	7
Italian	8	2	1	5	2
Hebrew	3	2	0	2	1
Polish	5	2	1	1	3
Russian	2	2	0	1	1
Italian	46	3	6	40	0
Hebrew	29	3	11	18	0
Polish	35	3	9	26	0
Russian	17	3	4	13	0
Italian	54	4	19	35	0
Hebrew	31	4	2	29	0
Polish	26	4	15	11	0
Russian	34	4	21	13	0
Italian	52	5	18	34	0
Hebrew	35	5	6	29	0
Polish	25	5	6	19	0
Russian	16	5	3	13	0
Italian	46	6	8	27	11
Hebrew	17	6	5	6	6
Polish	12	6	5	5	2
Russian	14	6	3	4	7

TABLE 8.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 10

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	28	1	6	20	2
Hebrew	13	1	1	7	5
Polish	18	1	4	7	7
Russian	21	1	3	7	11
Italian	10	2	0	7	3
Hebrew	6	2	0	6	0
Polish	17	2	1	14	2
Russian	11	2	0	9	2
Italian	26	3	7	16	3
Hebrew	13	3	5	7	1
Polish	21	3	6	9	6
Russian	14	3	4	5	5
Italian	64	4	2	56	6
Hebrew	81	4	3	71	7
Polish	75	4	1	70	4
Russian	42	4	2	31	9
Italian	28	5	1	22	5
Hebrew	41	5	0	41	0
Polish	65	5	2	60	3
Russian	48	5	0	41	7
Italian	14	6	1	8	5
Hebrew	12	6	0	10	2
Polish	8	6	0	7	1
Russian	19	6	2	10	7

TABLE 9.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 11

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	17	1	3	6	8
Hebrew	31	1	7	11	13
Polish	18	1	2	11	5
Russian	12	1	5	1	6
Italian	21	2	5	13	3
Hebrew	17	2	6	8	3
Polish	24	2	4	15	5
Russian	11	2	4	2	5
Italian	10	3	3	7	0
Hebrew	4	3	0	4	0
Polish	2	3	0	2	0
Russian	8	3	3	5	0
Italian	21	4	2	12	7
Hebrew	17	4	1	8	8
Polish	21	4	3	14	4
Russian	25	4	5	9	11
Italian	38	5	2	32	4
Hebrew	40	5	1	32	7
Polish	35	5	3	29	3
Russian	22	5	0	13	9
Italian	47	6	2	40	5
Hebrew	32	6	0	31	1
Polish	19	6	1	16	2
Russian	34	6	5	22	7

TABLE 10.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 12

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	74	1	9	59	6
Hebrew	68	1	7	59	2
Polish	41	1	11	25	5
Russian	32	1	5	24	3
Italian	61	2	5	47	8
Hebrew	43	2	1	37	5
Polish	29	2	3	19	7
Russian	37	2	1	27	9
Italian	8	3	2	5	1
Hebrew	5	3	1	4	0
Polish	2	3	0	2	0
Russian	7	3	3	2	2
Italian	16	4	1	12	3
Hebrew	9	4	0	8	1
Polish	8	4	2	6	0
Russian	13	4	4	6	3
Italian	13	5	4	8	1
Hebrew	9	5	0	9	0
Polish	8	5	1	5	2
Russian	16	5	2	11	3
Italian	6	6	1	4	1
Hebrew	2	6	0	2	0
Polish	4	6	0	3	1
Russian	1	6	0	1	0

TABLE 11.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 13 AND UPWARD

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	64	1	9	53	2
Hebrew	32	1	4	23	5
Polish	21	1	3	17	1
Russian	16	1	1	13	2
Italian	14	2	3	10	1
Hebrew	4	2	0	4	0
Polish	6	2	0	6	0
Russian	18	2	2	13	3
Italian	29	3	3	17	9
Hebrew	72	3	7	62	3
Polish	84	3	6	71	7
Russian	62	3	4	50	8
Italian	16	4	2	14	0
Hebrew	16	4	0	16	0
Polish	10	4	1	9	0
Russian	8	4	2	6	0
Italian	20	5	6	11	3
Hebrew	32	5	2	27	3
Polish	16	5	7	8	1
Russian	14	5	5	7	2
Italian	184	6	7	171	6
Hebrew	106	6	3	102	1
Polish	131	6	11	111	9
Russian	102	6	14	72	16

The ages of the persons undergoing the tests given in Table 12 ranged from 13 to 50. Within these limits, age, sex, and previous environment (so long as the subject was illiterate), seemed to make no difference in the facility with which the tests were performed.

TABLE 12.—RESULTS OF MENTAL TESTS APPLIED TO PERSONS AGED FROM 13 TO 50

Nationality	No.	Failed	Correct	Partly Correct or with Difficulty
Italian	1,164*	134	1,030	¶
Hebrew	896*	21	875	¶
Polish	754*	36	718	¶
Russian	921*	74	847	¶
Italian	864†	72	702	90
Hebrew	651†	35	595	21
Polish	390†	61	318	11
Russian	582†	124	442	16
Italian	1,844‡	51	1,722	71
Hebrew	1,227‡	12	1,148	67
Polish	894‡	9	803	82
Russian	971‡	16	861	94

* These persons were tested with line *d* of the cube test, with three trials if necessary.

† These were given the five-block or Healy frame test.

‡ With these the test was counting backward from 20 to 1.

¶ Not recorded.

The suspected defectives recorded in Table 12 were allowed to pass; the final score, made by all those that are there shown as having failed, with other tests, was found to be sufficient to permit them to enter. Many such persons I have no doubt are below the average of their race and environment but will improve after entering this country.

The number of mental defectives certified as such by the officers of the United States Public Health Service, and deported promptly by the immigration department, each month from Ellis Island alone averages from 75 to 100; the largest number in one month being 134.

To the kindness and help of my senior officers, Surgeon L. L. Williams, Surgeon E. K. Sprague and Surgeon C. W. Vogel of the Public Health Service, I owe the opportunity of presenting this paper. The officers who participated equally with me in this work and through whose painstaking and untiring efforts much valuable data has been obtained are Surgeon M. K. Gwyn, P. A. Surgeon R. E. Ebersole, P. A. Surgeon E. H. Mullin, Assistant Surgeons G. A. Kempf and W. L. Treadway, and Dr. Bernard Gluek of the Government Hospital for the Insane at Washington, D. C. One of these officers, Dr. E. H. Mullin, is now engaged in research among selected average normal aliens.

AN ANATOMIC AND PHYSIOLOGIC METHOD OF SHORT-CIRCUITING THE COLON

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Anastomosis of the caput coli at its lowest level with the rectum, as a means of short-circuiting the large bowel, presents all of the advantages and eliminates many of the evils of the operative procedures for this purpose now in use.

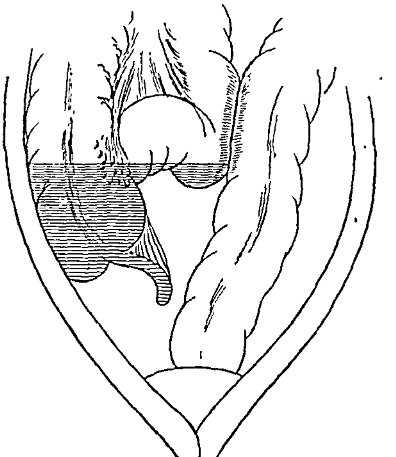

Fig. 1.—Caput coli undrained by ileosigmoidostomy because of ileocecal valve and anastalsis.

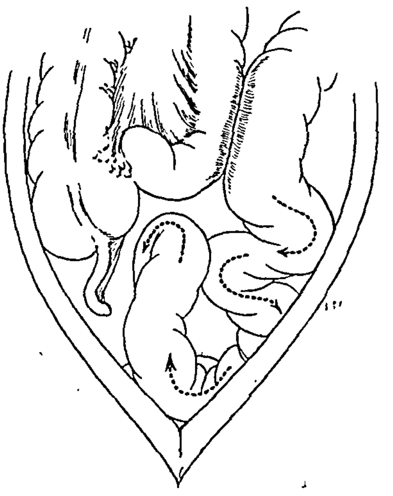

Fig. 2.—Stasis in lowest coils of sigmoid below ileosigmoidostomy.

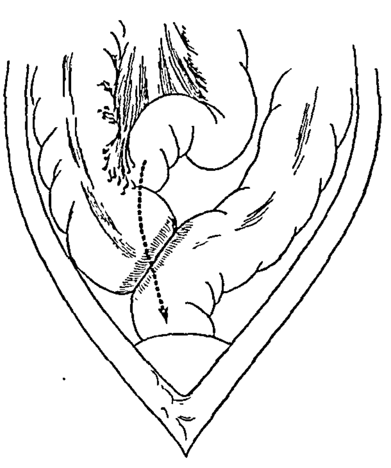

Fig. 3.—Direct and ample drainage from caput coli into rectum.

Ileosigmoidostomy does not always drain the cecum, as shown in Figure 1.

Anastomosis of the terminal ileum with the rectum is somewhat more efficient in that in this procedure account is taken of stasis in the lowest coils of sigmoid, and the contents of the ileum after such an operation are not emptied into this incompetent segment, but below it.

If this operation be done by detaching the terminal ileum and making a lateral ileorectal anastomosis, the pouch formation at the blind end of the ileum, described by Axel Werelius,[1] may defeat the object of the operation. Reversed peristalsis in the ascending colon, as described by Cannon, Rieder and Elliott, aided by pericolonic adhesions or membranes, will favor the retention of a stagnant mixture of fermenting food and bacteria in the caput coli.

If the undetached ileum be anastomosed with the lower sigmoid or rectum, drainage of the caput coli, a dilated pouch rich in bacterial flora and decomposing food residue, is inadequate. In this case a considerable part of the contents of the ileum will reach the cecum as before operation and be held by the atonic caput coli, the ileocecal valve and anastalsis as in a catch-trap.

If the caput coli be anastomosed freely to the rectum at the lowest point possible without traction, then the reversed peristalsis of the ascending colon must favor the emptying of the cecum through the artificial opening in the floor of the pouch, which is the chief habitat of ammoniacal food and intestinal bacteria of decomposition, and which even in starvation is not entirely empty (Cannon).

A majority of apparently healthy dogs show evidences of chronic inflammation about the caput coli, associated with stasis, which is most marked in the sausage-like appendix and the engorged caput coli.

Pericolonic inflammation in the human species likewise chiefly centers about the cecum and caput coli. It is here that direct drainage is most needed.

Anastomosis of the caput coli with the rectum may be made with sutures or the Murphy button. I have used the 1½-inch button for this purpose frequently and satisfactorily. The button is quite safe in this particular instance, since whichever way it is withdrawn, it will drop into the large intestine and is discharged readily. In my experience the corrugated caput coli has adapted itself more readily to the button than to sutures. The selection of the site, however, is of more importance than the method of securing the anastomosis.

In order that the anastomosis may be made on the most dependent surface of the caput coli, the appendix though normal, if in the way of anastomosis or good drainage, should be removed.

331 North Delaware Street.

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[1] Werelius, Axel: Surg., Gynec. and Obst., October, 1913.

PROGRESS OF ORTHOPEDIC SURGERY *

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As Wright says, the physician of the future will be an immunizer.

The greatest boon of the last decade to the orthopedist, as well as the general surgeon and physician, has probably been the advance in the treatment of tuberculosis. To Fraser the credit is presumably due of establishing the importance of determining whether a given tuberculous infection is of the bovine or the human type. He has demonstrated that in animals inoculated with the human type of tuberculosis there is little local or general reaction, with a gradual giving up of weight-bearing, and several months afterward rarely any osseous involvement when this material is injected into the knee-joint, and that only a chronic synovial tuberculous process develops; but if the material injected be of the bovine type the animal becomes crippled, the articular cartilage becomes eroded and the joint becomes filled with caseous materials inside of ten days or two weeks. Foci in the neighboring bones, the lungs, spleen and kidneys are often found and speedy death of the animal follows. In the examination of the material obtained at operation in seventy cases of bone and joint tuberculosis in which the patients were under the age of 12, he found the bovine type in forty-one cases and the human type in twenty-six, while three showed both. He considered the milk-supply responsible for the bovine cases.

From this it looks as though the bovine form of tubercle bacillus is the one that is most dangerous, and that the bovine variety is principally transmitted by milk. Julius Rosenberg has been able, by inoculation of cows and goats, completely to immunize the milk, which could be used and now is being used without the slightest particle of ill effect; in other words, during and after immunization the milk remains wholesome. Milk from the immunized animal contains antitoxins and bactericides differing in no respect from those of the blood-serum. The immunized milk, instead of furnishing a culture-medium, is inimical to the growth of bacteria, owing to the presence of the precipitins and bactericides. In order to prove this, Rosenberg took 5 c.c. of milk immunized against tuberculosis, added a loopful of human tubercle bacilli, injected this into the peritoneum of a guinea-pig, and found the animal perfectly well after four weeks, whereas the same amount of tubercle bacilli mixed with sterile water and injected into another pig was followed by death from tuberculosis in the same length of time. He has succeeded, he thinks, in producing passive immunity by having patients drink the milk of these immunized animals. The fact that immunized milk in his hands has destroyed tubercle bacilli and produced antibodies in the blood would clearly show its indication and usefulness in tuberculosis. Should this be demonstrated, and Rosenberg is now supplying several hospitals in the East, we have with us the greatest boon that the medical profession has been given in five decades.

Serum therapy in tuberculosis has evidently come to stay, as it is useful not only in closed but also in open tuberculosis. Foerster speaks most favorably of tuberculin in surgical tuberculosis, but believes in exceedingly small doses. Fraser and McGowan advocate by all means the use of autogenous vaccine, and say that when it is impossible to procure this the vaccine prepared from tuberculous material from the human gland is the best.

ARTHRITIS

Ely believes that the classification of the joint-diseases is to be found in the two essential joint structures, the synovia and the bone-marrow. The first class is characterized by proliferation of the synovia or the lymphoid marrow or both, and as a result of proliferation of these two tissues the parenchyma of the joint, the cartilage, atrophies. The other class is characterized by a degeneration of the synovia and of the lymphoid marrow, and as a result of this the bone and cartilage show a distinct tendency toward hypertrophy and growth of new bone. Of course, this classification corresponds closely with the atrophic and hypertrophic types of Goldthwait. According to Billings and Rosenow, chronic arthritis with deformities is primarily of infectious origin. Woodward and Wallace have noted that in what is termed rheumatoid arthritis there is a marked diminution of the free hydrochloric acid with an excess of mineral chlorids in the gastric juice. The first step in the treatment of any form of arthritis, of course, is the thorough investigation and a finding of the focal cause. Billings believes that the faucial tonsil is most frequently the seat of focal infection; still he insists on other points, such as the sinuses, the teeth, the jaw and other organs being looked into frequently. A seemingly innocent tonsil after inspection will divulge the secret. He advises, by all means, the use of braces to correct the deformities if possible, but the hygienic management does more than anything else, and the basis of the treatment is immunity established by the judicious use of autogenous vaccines. Of course the removal of the cause is always demanded.

POLIOMYELITIS

Howard and Clark have shown that for several days the common house-fly may carry about the active virus producing this dreaded disease. The mosquito will not carry the virus. Bedbugs will carry it for seven days. Lucas and Osgood have demonstrated that the virus will live for two years in the nasal discharge. Flexner is still working on an immunizing serum.

Orthopedic surgery has made many advances during the past few years in the treatment of anterior poliomyelitis. Of course, in the acute stage rest in a plaster-of-Paris bed or some other form of splint to maintain normal position of the affected members is to be prescribed. At present there are a number of operative procedures which can be pursued a year and a half or two years after an attack: arthrodesis, tendon transplantation, use of silk ligatures and nerve anastomosis. There has been no improvement on the Whitman method of arthrodesis of the ankle-joint, advisable in almost all cases of paralytic calcaneus; this consists in the evulsion of the astragalus and dropping of the tibia on the top of the os calcis, with or without transplantation of the peroneus tendons.

Tendon transplantation goes back as far as 1876. Lange probably has done more than any one else to perfect this method, and also to advise the use of artificial tendons in the lengthening and transplantation. At first he attached these ligatures or tendons to the periosteum, but now his method with the silk or with the tendon is to transfix the bone and carry these through, lapping after transfixion. What led him to give up, to a great extent, the periosteal attachment, was the fact

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* Read before the Academy of Medicine, Jan. 17, 1914.

that after use the tissue seemed to lengthen at the point of impact. Lange has pursued the use of silk for artificial ligaments of the joints, and this combined with a partial arthrodesis is probably, at present, the best method, especially with the ankle-joint. Arthrodesis of the knee-joint is only occasionally employed, resection being better. Arthrodesis of the hip is rarely done at present; a brace here seems to be the best method of treatment. Nerve transplantation and anastomosis in anterior poliomyelitis are still in the experimental stage.

The new operation in nerve transplantation which has been advanced by Taylor and Casamajor for traumatic Erb's paralysis in adults should be mentioned. The traumatic variety seemingly is not uncommon. This paralysis is usually caused by the forcible separation of the shoulders from the neck, and renders the arm absolutely useless. The operation has been done quite a number of times by Taylor and Casamajor, and although perfect results have not followed, marked improvement in the majority of cases has been reported up to date. It is a remarkable fact that in this injury the cervical fascia gives way before the nerves, next the nerve-sheath, and finally when the nerve heals, these combine to form an organized cicatrix, which prevents the passage of nerve impulses or even the regeneration of nerve fibers.

Palpation of the neck in the region of the fifth or sixth cervical transverse processes gives evidence always of a mass. This cicatricial mass is dissected out completely and the nerves brought if possible into approximation and held in this position from four to six or eight weeks by a brace or plaster of Paris applied so as to approximate closely the head and shoulders. Then passive motion is practiced, beginning with the arm and head. When the nerve-roots have been torn from the cord there is no chance of joining, and anastomosis is done from the nerve to its adjacent one. The nerve most frequently torn is probably the fifth or sixth. Strong silk is used in the sutures. Under ether anesthesia an oblique incision is made from the posterior bone of the sternomastoid muscle at the level of the carotid tubercle down to the junction and middle third of the clavicle. The only important vessels that are brought quickly into view are the suprascapular and transversa colli. It seems that with this operation, for the first time in the history of surgery the deformity of this character has been the subject of operative work.

CONGENITAL DISLOCATION OF THE HIP

In 1890 Hoffer of Berlin advised an open operation for this deformity, which was looked on up to this time as irremediable. In 1895 Lorenz modified this procedure and began his closed method of reduction. In 1900 he published his results. It is interesting to note that among 450 of these cases there were eleven of fracture of the neck of the femur, three of fracture of the pelvis, three of perineal paralysis, three of crural paralysis, three of sciatic paralysis, one of rupture of the femoral artery, and one of gangrene necessitating amputation. These complications are supposed to be due to the great amount of force used in the abduction of the limb.

In 1905 Calot modified Lorenz' method. After the patient is anesthetized, the pelvis is firmly fixed by an assistant, the operator flexing both the thigh and the knee to 90 degrees, at the same time firm traction being made directly upward with the knee in the flexed position, with little or no abduction or rotation. While this manipulation is carried out, one assistant holding the pelvis down and the other making traction, the operator places his thumbs beneath the great trochanter and presses upward, by which means he is enabled to press the head of the bone directly into the acetabulum. This seldom fails, as Calot says, with patients up to 3 years of age. A plaster spica is then placed on in the position in which the reduction occurs. It is well padded with cotton, and includes the foot and entire limb and pelvis. Following this treatment of Calot, Hibbs of New York constructed a table for the use of which the following instructions are given:

> With the child on the table and the pelvic straps applied and made very tight so as to fix the pelvis, the thigh is flexed and abducted, and when in this position the leg is extended until the hamstrings are tight, but not stretched. At this point in the procedure the trochanteric pad is forced upward against the trochanter so as to force it upward and forward. The force exerted by this pad, as it is sent against the trochanter, may be estimated by the increased tension of muscle when the pad is securely against the trochanter. the leg being already in extreme abduction and flexion.
>
> It is abducted and extended, and as the trochanter is held against the pad, the head is forced forward and upward into the acetabulum. The leg should be put in plaster with muscles tense at this point.

Hibbs has succeeded in reducing these congenital luxations up to the age of 7 with little or no trouble. The number of cures, by which I mean complete functional and anatomic recoveries, averages 90 or 95 per cent. in unilateral cases and probably about 50 per cent. in bilateral cases. In a great many cases the transposition of the head of the bone under the anterior inferior spine gives a good functional result, but this is not an anatomic cure.

OPERATIVE TREATMENT OF POTT'S DISEASE

As far back as 1891 Hadra advised and did the wiring of spinal processes in order to immobilize the vertebrae. This was tried by several surgeons afterward, but was soon discontinued.

Lange, on his visit to this country in 1910, read a paper before the American Orthopedic Association in which he pictured the use of steel wire buried on the other side of the spinal processes and held in position by strong sublimated paraffin-silk ligatures. He also exhibited roentgenograms of several cases in which he had succeeded in embedding the wire. There was apparent success in one or two cases, but in most it had to be removed on account of the change in the metal.

In June, 1911, Hibbs commenced his operation of cutting down on the spinal process, and stripping the spinal supraspinous ligament and periosteum from each side of the bone above and below the area of the involvement. After being laid bare, these spinal processes are broken down, greenstick-fractured at their bases and lapped one over the other so as to produce a continuous bony formation, thus fixing the spine.

The same year, in September, Alby began his bone transplantation by splitting the spinous processes with a chisel down to their bases, cutting off a splint of the tibia and implanting this so as to cover a process or two above and below the involved area. Both of these operative interferences have been remarkably successful, and although the time has not passed for final judgment, it is undoubtedly the best treatment for rapid recovery in Pott's disease.

MOBILIZATION OF ANKYLOSED JOINTS

The up-to-date treatment of ankylosed joints is practically the method of Murphy with the fascia and fats interposed and Baer's pig's-bladder membrane.

SCOLIOSIS

Since its birth orthopedics has had scoliosis as a *bête noire.* Rotary lateral curvature of the spine has probably had as much hard work done on it as all of the combined deformities together, and not until 1911, when the treatment of this trouble was to a great extent improved by Abbott, did the profession accomplish much in the way of correction.

The Abbott method has been used generally throughout this country and some of the foreign countries with varied success. Dr Abbott himself is probably indebted to Dr. Goldthwait of Boston for the demonstration of the fact that correction, particularly of lateral scoliosis, in the flexed position of the body, is due to unlocking of the articular processes of the vertebrae.

After having pursued this treatment in a great many cases of rotary lateral curvature, Abbott's conclusions are as follows:

1. Rotary lateral curvature of the fixed type, developed in childhood and persisting in adolescence, cannot be cured perfectly.
2. The condition of the patient can be much improved.
3. The anteroposterior postural deformities can be corrected.
4. The lumbar lordosis can be corrected.
5. The lateral deviation of the body can be corrected.
6. The lateral deviation of the spine is corrected in early cases.
7. The rotation of the vertebrae may be improved but not corrected.
8. The use of the plaster jacket, applied by the Abbott method in flexion with corrective felt pads, is very satisfactory, in that we are enabled to obtain the result in a shorter time than by any other method of treatment heretofore practiced.

MacKenzie Forbes of Montreal, last July, published a paper entitled "The Paradoxical Treatment of Scoliosis." In 1903 Lovett found that if the third dorsal vertebra is fixed in a wrench, a lateral curve always accompanies the twisting, going to the left when the twisting was to the right, and vice versa. Forbes found that if a patient were twisted to the right by the arm instead of the wrench, the side bent to the right, and vice versa; in other words, he seemed to have discovered a paradox; but this was accounted for by the fact that Lovett applied force directly to the spine, and it rotated on its own center of rotation. Forbes applied force to the thorax and indirectly to the spine, in this way acting on the rib wall; the rib acted as a lever on the posterior part of the vertebrae, and the vertebrae rotated about their center of rotation. Hence they rotate toward the direction of the force applied. It is well known that the body of each vertebra in organic scoliosis is rotated toward the convexity of the spinal curve, and in speaking of the treatment of this condition of organic scoliosis he says:

> Is it possible that we have erred in the past when we have treated by applying force to the convexity of the spinal curve? What do we do? We approximate the vertebral body to the rib wall, we increase the rotation of the vertebra itself; in other words, we have been rotating in a wrong direction.

Forbes' treatment, the rotation treatment of scoliosis, aims at causing the correction of the deformity by the production of its counterpart, and is undertaken by rotating the patient's thorax on a fixed pelvis in a direction toward the side of convexity of the curve. Thus we not only change the curve of the spinal column, but we also change the deformity of the thoracic wall; that side which bulges unduly is flattened and the flattened side is filled out. The patient is held in this position by the application of paster of Paris. Of course, flexion of the spine is necessary. All that one has to do is to rotate by means of the arms and fix, cutting out windows of the contracted thoracic walls and providing pressure over bulging walls. This treatment may be combined with that of Angeles G. Cook, who demonstrates that the lumbar spine is the center of motion of the human body, and that the balance is an absolute essential. (It may be given as an axiom that if we continue on our feet and if we can reverse the lateral curve of the lumbar spine, we must of necessity reverse the whole balance of the human body. It does not matter whether the curve of the lumbar spine be primary or compensatory, if the lumbar spine is curved to the left we can cause it to be curved to the right; and if we can cause the curve to the right we have changed the entire balance of the whole body and all the factors, through gravity modified by anatomic conditions.) Wolf's law, etc., which formerly worked to produce the deformities, is now utilized to correct the deformities, so we see that the last word in scoliosis has not yet been spoken.

That the internist can be assisted materially by the orthopedist in the treatment of abdominal visceroptosis, chronic intestinal stasis and hypertension is plainly demonstrated in the following facts expressed by Joel E. Goldthwait:

1. Abdominal visceroptosis is invariably associated with disturbances of poise, which must result in weakness of the muscles and strain of the joints. The joint-strain is manifested chiefly in the feet, knees, sacro-iliac joints and low back, and shoulders. When the congenital type of visceroptosis exists, the disturbance in poise shows even in childhood.
2. The imperfect poise associated with visceroptosis results in a gradual weakening of the trunk-muscles, with consequent lessening of this part of the support for the trunk as well as for the viscera.
3. The imperfect poise, commonly showing as the droop of the shoulders and flattening of the chest, must of itself cause downward displacement of the abdominal organs, with possible interference with their function, even though the formation of the organs, together with their ligaments, was wholly normal in the beginning.
4. Many of the chronic joint-diseases are probably due to the disturbed physiology resulting from the malposition of the viscera as well as possibly to absorption from the gastro-intestinal tract.
5. Treatment of the joint-strains resulting from the postures associated with visceroptosis, as well as the treatment of the joint diseases due to disturbances of the abdominal viscera, is incomplete, and many times hopeless, unless the viscera are properly treated so that undue strain is relieved and their normal function made possible.
6. The best health and greatest efficiency of the individual are possible only when the body is used in such poise that there is no undue strain or interference with any of the structures.

As Goldthwait has said, when the human figure is held fully erect, the chest is raised, the ribs are flared at the bottom, the diaphragm is high and this gives space under the ribs for the upper abdominal contents. When these upper organs are held in place there is ample space for the other viscera in the lower abdomen. When the muscles of the abdomen are contracted the wall is firm and we have support in the front and sides.

If the body droop, the shape of the abdomen changes. The ribs incline downward and there is a backward movement of their anterior portions; as can be seen at once, this results in a diminution of space in the upper abdomen, and the diaphragm must be pulled downward. Now the abdomen itself protrudes, everything is directed forward and downward by continued pressure from above and a complete relaxation of the muscular rigidity of the normal abdominal walls. The lumbar spine under these circumstances is lordosed and the upper part of the chest is thrown forward and a stooping position is maintained.

We are well aware that there are two types of this enteroptosis, congenital and acquired. We fully understand that if the congenital type exists, it must always exist; but it is well known that during early life the prominent symptoms of a general enteroptosis do not attract attention. The symptoms which develop later, undoubtedly because of the increased downward misplacement of the organs, can be moderated so as to relieve strain, and will be followed by improvement with retraction of the visceral ligament exactly the same as that which takes place in a relaxed joint with the removal of the strain. (In the attitude of congenital ptosis, note the downward inclination of the ribs, and the backward inclination of the body from the hips.) Goldthwait has a brace (from a cast) made in partial hyperextension, and this is worn night and day and just after meals. Hyperextension over a pillow for thirty minutes, followed by the prone hanging position for five minutes, will reduce blood-pressure in five minutes from 10 to 30 mm.

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AN EVALUATION OF THE PSYCHOGENIC FACTORS IN THE ETIOLOGY OF MENTAL DISEASE

INCLUDING A REVIEW OF PSYCHANALYSIS *

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The increasing spread of the cult known as psychanalysis, the consequent tendency to neglect the clinical study of psychiatry and the confusion resulting from the disregard of established clinical distinctions has led me to undertake a consideration, first of the value of psychogenic factors in general, and secondly of sexual psychogenic factors in particular.

INTRINSIC CAUSES OF MENTAL DISEASE

When we review the known facts of the etiology of mental disease, we realize that they resolve themselves primarily into two groups, namely, the intrinsic and the extrinsic causes. The intrinsic causes are embraced in the great factor of neuropathy. By neuropathy is meant a condition in which the nervous system is fundamentally aberrant and defective in development. There are present morphologic and functional deviations and weaknesses, and as an outcome there follow of necessity — it may be during childhood and youth or in the adult period — degeneration and disease. Quite commonly the existence of such a neuropathy is revealed in the peculiarities of mental development of the individual; in retardations, precocities, irregularities, arrests and failures, or, in lesser degrees, in morbidity of the affects, in excessive self-consciousness and introspection, in shyness, suspicion, distrust, unreasonable fear, morbid conscientiousness. As might be inferred, it is not only the nervous system, but the organism as a whole, which is aberrant and defective. Occasionally, there are present gross anatomic appearances, the significance of which is obvious. Among these are peculiarities in the conformation of the skull, of the features, ears, limbs or digits. Sometimes the skull presents an abnormally flattened occiput or it may be that the skull is oxycephalic, clinocephalic or markedly asymmetric in shape. The limbs, too, may be disproportionally short or disproportionally long; the digits may depart from the normal relations of length to each other or may be otherwise abnormal; or it may be that a male patient presents feminine anatomic characteristics or a female patient masculine anatomic characteristics. The presence of such features certainly justifies the inference that the organism as a whole is imperfect and deviate. Significant, too, are such occasional findings on the necropsy table as anomalies of the viscera, for instance, anomalies of the cardiovascular apparatus, anomalies in the lobulation of the lungs, anomalies in the lobulation of the liver, and horseshoe and amorphous kidney. It is not surprising that individuals who are defective in their organization, who have a nervous system imperfectly and aberrantly constituted, should break down under the mere strain of living. That such breakdowns occur, at times early or relatively early and thus give rise to the insanities of the juvenile period, and at others, relatively late and thus give rise to the paranoid affections of the adult, is a matter of common knowledge.

The subject of neuropathy presents itself, however, in still another aspect, and that is in its relations to heredity. That hereditary factors obtain in a vast number of the insane is of course well known, 80 per cent. and more being present in the manic-depressive and 80 or 90 per cent. in the group of dementia praecox and paranoia, and an overwhelming percentage in the neurasthenic-neuropathic states, psychasthenia and hysteria. It also becomes evident that heredity is of two kinds, one in which a specific neuropathy and another in which a neuropathy that is general in character is transmitted. As an instance of the first, melancholia-mania is probably to be regarded as typical and as an instance of the second, dementia praecox. It is probable also that in some affections, as paranoia, both forms of hereditary transmission may be commingled. The object of the present paper forbids a detailed consideration of this interesting subject. I am constrained at this time merely to lay emphasis on the all-important fact of neuropathy, and later to point out the rôle which it necessarily plays in the evolution of symptoms.

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EXTRINSIC CAUSES

Among the extrinsic causes of mental disease are the infections, the intoxications, visceral disease, the diseases of metabolism, trauma and the like. The rôle which these factors play is well recognized. The causal relation is striking and undeniable, as witness the deliriums and confused and allied states which accompany or which follow the infections and intoxications. We are always, however, forced to take into consideration the factor of a preexisting neuropathy. It is a matter of every-day experience that some patients become delirious from causes totally inadequate to produce delirium in others. Every practitioner who has to deal with the infectious diseases realizes the truth of this statement. Again, poisons, such as alcohol, give rise in some persons to pronounced mental disease while other persons exhibit an amazing tolerance to the same poison. It is this factor of tolerance, this factor of resistance, on which the difference depends. Feebleness of resistance to the various extrinsic causes of mental disease — infections, poisons, visceral disease, trauma, etc. — means of necessity a neuropathic make-up, a neuropathic constitution. Of the total number of cases of typhoid fever, for instance, only a very limited number develop insanity as a sequel, and in this limited number the explanation must be found in a preexisting neuropathy. Further, in my experience a frank history of neuropathic factors in the heredity is found in more than half the cases.

What is true of the infections and poisons is equally true of trauma, whether that trauma be physical or mental. Evidently psychogenic factors, so-called, must be included among the traumatic. To these psychogenic factors let us now turn our attention.

The older writers laid much emphasis on psychic causes in the etiology of mental disease. Among such causes a prominent place was given to worry, care, sorrow, remorse, reverses, disappointments, misfortunes, all of which were supposed to have a causative value in the production of the most diverse affections, melancholia and paresis, for instance. Melancholia is now known to be but a part of the symptom group of a much larger affection, manic-depressive insanity; and the latter in turn has proved to be a specific neuropathy, one almost exclusively hereditary, which bears no more relation to psychic trauma than it bears to the infections. Paresis, on the other hand, is now known to be a disease of definite microbic origin, as much so as tuberculosis, and is as little dependent on psychic trauma as is the latter.

In other words, the more we have learned of the true nature of mental disease, the more have psychic causes disappeared from our etiology. An increasing experience has shown that such factors can be merely incidental, that at most they can be of value only in a preexisting neuropathy. Further, this value is very limited and stands in direct relation to the degree of this preexisting neuropathy.

Again, the reaction of a person to a special psychic factor depends on the extent to which the emotions are aroused. In the normal person this reaction does not lead to pathologic results; when pathologic results do follow, these results are to be regarded as merely symptomatic of the underlying neuropathy. At most, psychic factors give to a preexisting morbid state a special coloring, give a special detail to a delusion or to an obsession, but cannot primarily bring it about. At most, psychic factors act as an incidental support or framework on which the delusional or obsessional feeling can secure a hold or by means of which it can obtain concrete expression. The truth of these statements will, I think, become more apparent as we proceed.

PSYCHANALYSIS

Let us without further delay pass to the consideration of the psychic factors on which Freud and his disciples have laid so much stress, namely, psychic factors sexual in nature, sexual psychogenic factors as they might be called, or, to use the language of the Freudian sect, sexual traumas. It is to these factors that this sect ascribes every known form of nervous and mental disease with the sole exception of those affections, the actual organic, infectious or toxic nature of which it is impossible to deny. Further, these causes are said to be operative from intra-uterine life and childhood on; and from their very nature are such that every human creature is or has been exposed to them. At the very outset we are filled with astonishment at the fact that there are any normal boys and girls, any normal men and women left in the world, and the inquiry naturally suggests itself, on what are these extraordinary claims based? I shall not take the time to review the well-known case of Breuer — the girl who was hysteric and who got better after confessing to Breuer that she had masturbated — on which case Freud subsequently built his theory of sexual traumas and later developed his treatment by psychanalysis, but shall take up at once the various sources from which the Freudians assert that they derive their information. The first of these consists, as is well known, in the unearthing — as they believe — of repressed memories of sexual occurrences — "traumas"—experienced in childhood. Such memories, being unpleasant or painful, are suppressed and not permitted to enter the field of consciousness, but commonly the attempt to suppress the memory is only partially successful. Though buried, it is supposed to be still active and manages to reach the field of consciousness by "displacement" and "conversion." The unpleasant feeling associated with the memory leaves the memory — the complex — associated with the sexual trauma and joins itself to some other complex which has free access to the field of consciousness, and in so doing gives rise to fears, obsessions, delusions, tics or other psychic phenomena.

To the student familiar with the development of our knowledge of functional nervous disorders, the preceding interpretation at once recalls the writings of Janet. Janet, it will be remembered, showed that all of the various fears, phobias, obsessions, states of anxiety, indecisions and the like were really manifestations of but one disorder. He thus, by a brilliant generalization, brought them under one caption, for which he employed the term "psychasthenia." At the same time he pointed out the fact that in many of these cases, various acts of the patient in the past, breaches of conduct, of the proprieties, peccadilloes of various kinds, of which the patient was subsequently ashamed and which he tried to forget, played an important rôle in the evolution of the symptoms. Janet's observations were as important as they were satisfying. They really embody a kernel of truth, a modicum of actual scientific fact. Neither Freud nor his followers gave to Janet's discovery either recognition or attention, but on material such as furnished by the Breuer case of hysteria and restricting all causes to sexual transgressions, proceeded to erect a special system of psychology; special, first, in that it deals exclusively with sexual factors, and secondly, in *that it constitutes a system of psychology of the unconscious mind.* They formulated theories which deal with doubtful inferences and questionable hypotheses as though these were established facts and this, too, in a field in which from the very nature of the case that which actually occurs is beyond the possibilities of humen ken. *A special terminology has arisen;* for instance, "repression, displacement, condensation, transference, introjection, projection, introversion, conversion, sublimation, determinations, exteriorizations" and others still which might be added; all of these terms are used as though they dealt with actually observed concrete *facts, and not with purely metaphysical* abstractions.

This method of dealing with a subject essentially incapable of scientific demonstration becomes especially evident in the Freudian explanation of dreams. This need not be repeated here, save to remind the reader *that every dream is held to have a sexual content,* that it deals with a subject of such a character that it cannot be discussed without injury to the dreamer, without lesion of the proprieties, and lastly that the dream always deals with a desire. Sometimes the dream is a realization, unveiled and undisguised, of an unsuppressed desire; sometimes it is the realization of a desire veiled, latent and suppressed; sometimes it is the realization of a desire suppressed and little or but slightly veiled. The secret, non-communicable nature of the dream and the desire, veiled or outspoken, constitute, according to this theory, the important factors of the dream. In other words, in the dream, suppressed sexual complexes are supposed to come to the surface and the desire, veiled or frankly expressed, is thus gratified. By this is not meant that dreams always deal with nakedly expressed sexual conceptions and feelings, but quite commonly that these elements are veiled or symbolized, so that, the patient having related or written out his dream, the psychanalyst reads into them the fantasies of his own autosuggestions. To show the extent to which Freud has gone, he assumes that during the dream there is a "critic" or "censor" which concerns itself with the suppressed desire. The suppressed desire forms a compromise with this critic, is modified, symbolized, and the desire so modified is represented as fulfilled. In other words, according to this theory, just as a repressed sexual complex may give rise to a nervous or mental symptom by reaching the surface of consciousness in a transformed or converted shape, so may it reach the surface in the dream state in a converted form and thus bring about relief. For the introduction of the hypothetic "critic" or "censor" there is not the slightest justification; it is something created, cut out of the whole cloth. Indeed, this may be said of this entire dream theory. It is very probable that dream states do not embody the complex processes here outlined, but that indeed they are of very short duration. There is much on the basis of observed fact to justify the opinion that dream conceptions arise just before the sleeper awakens, that is, just as he is in the act of entering into consciousness. The dream conceptions are part and parcel of the act of awakening and merely furnish the material from which the dream is subsequently elaborated. This elaboration in truth occurs only after waking consciousness has been established. The confused, simultaneously arising dream pictures are then arranged according to time and location, the lacunae being filled in by the aid of the imagination and reflection.

In addition to the theory of the repressed memories of sexual traumas in childhood, and the repressed desires revealed in dreams, the Freudians employ as is well known a third method of unearthing repressed sexual complexes from the unconscious mind — the subconscious — namely, that of the association test. The occasion forbids a consideration of this method at the present time; suffice it to say that its results are commonly quite trivial and are often subject to gross misinterpretation.

The Freudian psychology of the unconscious mind is in several aspects extremely peculiar. For instance, just as Freud does not hesitate to create out of the whole cloth a wide-awake "critic" guarding the dream, he equally without hesitation ascribes new qualities and peculiarities to the emotions. He makes the latter separate things, mobile somethings, capable of being detached, displaced and producing effects which have no relation to the origin of the emotion. Again he assumes that, as in the case of the "critic" or "censor" of the dream, there is in the unconscious mind in the waking state, a something which manifests itself as an effort at self-protection, so that thoughts with unpleasant emotional content are shoved into the subconscious, but *there only to give rise to other troubles.* That this theory is not in accord with universal experience can, I think, be safely maintained. It is quite impossible, thus, to forget a real worry, as a crime, a financial disaster, death of a child, etc.; indeed, the greater the worry, the more insistently is it present to the mind.

Further, it should be emphasized that the Freudian psychology is peculiar in the fact that all of these detachable and movable emotions and suppressed memories have to do exclusively with sexual matters; and lastly that the repressed ideas coming to the surface in dreams, in psychanalysis, in the association tests, do not *signify what they appear to signify, but are masked and* disguised; in other words, are symbols. The art of the psychanalyst lies in the interpretation of these symbols.

That with such hypotheses and under such circumstances the psychanalyst can find in a given patient almost anything that he is looking for goes without saying. Indeed, the interpretation depends on the imagination, the autosuggestion of the analyst, the figments and the fancies of his own brain. At times the symbols indicate what they most readily suggest, at times and apparently without reason, the opposite. There can be no doubt that the psychanalyst always finds that for which he is seeking. There is *not a single* object in the universe in which a sexual significance cannot be discerned, whether it be a hat, a cup, a snake, a horse, a tooth-pick; even the physician's stethoscope is believed to be a phallic symbol. As a matter of course, the conclusion to be formed from the investigation of a given case already exists preformed in the psychanalyst's mind, namely, that there are present in the patient repressed sexual memories. The analyst regards this preformed conclusion as an axiomatic truth. The objection to this whole matter lies not so much in the unpleasant and repulsive character of its details as in the hopelessly illogical character of its doctrines and the unscientific character of its methods.

To what extremes and how peculiar the beliefs in regard to psychanalysis have grown is revealed by a cursory review of some of its later doctrines. It began with the theory of sexual traumas in childhood, but now it has been extended to include the period of intra-uterine life. The psychic life of this period, according to Freud's Hungarian disciple Ferenczi, is one of "unconditioned omnipotence."[1] This term, whatever it may mean, Ferenczi applies to the child *in utero* because, without any effort on its part, it is supplied with nutriment and caloric.

Further, while being born, that is, during the act of passing through the pelvis of its mother, the child suffers from fear, and this fear is the prototype of the attacks of fear which come on at later periods in the life of the individual, for these attacks act by evoking the memory of this "birth fear." Again, the child is not asexual. It finds itself in a state of auto-eroticism from which arise all of the determinations of its future soul-life. Still more, the child is a polymorphic pervert and universal criminal (Stekel). The first sexual tidal wave is reached at 3 or 4 years of age, and the dominating factor is incestuous love, the "Oedipus complex." In later life the tendencies of the individual are likewise determined by his eroticism; thus the "sublimation of erotic and criminal tendencies" gives rise to the surgeon. Economy, love of order and obstinacy indicate anal eroticism. Luxurious water-closets, that is, hygienic water-closets, such as are universal in America, also indicate anal eroticism. The love of domesticated animals, the liking for sport, are likewise the outcome of the libido (the sexual desire). The dream and the neuroses alike embrace not only the life of the child, but also that of the savage and primitive man. The epileptic attack is a retrogression into the infantile period of wish-fulfilment by means of incoordinate movements; it is an overpowering of the moral consciousness by the criminal unconsciousness; it replaces the sinful sexual act (Stekel). Melancholia and mania, we are told, are the product of the repressions and displacements of the converted sexual desire, the transformed libido. Delusions of jealousy have their origin in the projection by the husband of his repressed polygamous impulses on his wife. A cause of chronic paranoia is unmasked as an irritation of the anal erogenous zone. The symptoms of dementia praecox are conditioned by thoughts, which, because of their unpleasant character, are repressed; the delusive ideas of the patient are merely symbols of thoughts. The patient suffers from "reminiscences of humanity" while "his history embraces all mythology." The real underlying, the fundamental, the central phantasy of dementia praecox is of course the incest — the Oedipus—complex. What a narrow escape paresis has made in this list of affections! Yet the prediction can be safely ventured that it too, in spite of the spirochete, will be brought within the psychanalytic pale. Psychanalysis further explains migraine, every form of headache that is not organic, asthma, angioneurotic edema, hysteric sneezing, mucous colitis and what not. In what words shall we characterize such fantastic nonsense, such vacuous harebrained absurdities, such meaningless jargon! And such utterances are dealt with by the psychanalytic sect as though they were each and every one scientifically demonstrated facts, self-evident, axiomatic truths.

The psychanalysts have assumed a most exalted and expansive tone. They deal with the very "depths" of psychology, with the "weight of absolute fact." The publications of this or that member of the sect are spoken of as "revelations." Psychanalysis has "revealed the unconscious soul-life in its entire extent" (*Imago*). The dream interpretation is the solution of a riddle which has defied solution for thousands of years. Sexual morality is now erected "in a new form"; "there is now beginning a healthier, more honest conception of life," "for we know," say the psychanalysts, "that the future is ours." The hope is also expressed that the opponents of psychanalysis will be educated to assume a "respectable tone"; they are charged with harboring "unscientific prejudice" and "prejudiced science." They are also told that they are "ignorant prattlers." Psychanalysis has now expanded so as to embrace all departments of human knowledge. The journal *Imago* deals with the reformation of manners, of religion, of the science of religion, with right living, esthetics, literature, art, mythology, pedagogy, criminology and moral theology. The psychanalyst is now the great reformer who is putting everything to rights. He speaks with a smile of indulgence and condescension of the cavillers who fail to accept his doctrines; addresses himself to the "initiated" (*Wissenden*), speaks of the "Master" or of the "brethren"[1] of his cult.

At times it is proclaimed that the proof of the correctness of the psychanalytic interpretation lies in the cures affected. Breuer's original case of hysteria was the much-vaunted example of successful treatment. It is a matter, however, of every-day experience that the fact of recovery from hysteria is no evidence as to the specific value of any method of treatment, inasmuch as in hysteria recoveries occur under the most diverse conditions so long as the suggestion is made that the patient will recover. In the instance of psychanalysis both physician and patient start with the presumption, that is, with the suggestion that the cause will be revealed, that the cause *is* revealed and that, with this unearthing of the cause, the symptoms will disappear. The discovery of repressed sexual complexes is exactly what we would be led to expect under these circumstances; as in hypnosis, the believing physician and the believing patient react on each other; both are under the influence of the same suggestion. The patient knows just what is expected of her and the physician finds just what he is expecting to find. In other words, psychanalysis, in spite of the special technic which its disciples say they pursue, is nothing more than suggestion in a new pseudoscientific guise. That it achieves a measure of success in such affections as hysteria—so amenable to all forms of suggestion—is not astonishing. It is exactly what should have been expected.

Inasmuch as we are told that the successful treatment of a case requires from six months to three years, it is not surprising that success now and then follows the persistent use of the treatment in affections that are self-limited in duration or that pursue a wave-like course. A case of melancholia so treated naturally comes to an end after a number of months and is then regarded as cured by psychanalysis. It is probable also that such cases are often improperly diagnosticated and are then reported as cases caused by this or that painful complex cured by psychanalysis. When the symptoms recur, which is almost inevitably the case, the patient usually has recourse to another physician and thus the failure becomes known, as in a case within my own experience. Stekel admits failures in periodic affections, in hypochondria and in homosexuals, but psychanalysis, rich in resources, explains failures by asserting that the patient did not want to recover and resisted his physician.

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[1] Hoche: Ueber den Werth der Psychoanalyse, Arch. f. Psychiat., 1913, li, No. 3. I have in these pages made free use of much of the matter in this admirable article.

It is a matter of proper inquiry whether or not psychanalysis is harmful. Hoche not long ago addressed a circular inquiry to a large number of clinicians, psychiatrists, neurologists and practicing physicians, selecting colleagues who were experienced and whom he knew personally or scientifically sufficiently well to place dependence on their judgment. The results of this inquiry, secured independently and from the most varied sources, were remarkably uniform. It has come to light in the first place, that psychanalysis is being applied in cases which one would think the psychanalysts themselves would regard as unsuitable—epilepsy, paresis, hebephrenia, catatonia, melancholia; such cases are doubtless submitted to the treatment as a result of gross diagnostic errors. Quite a number of practitioners of psychanalysis, it would appear, are persons who possess little or no training in psychiatry; indeed, a knowledge of clinical psychiatry is considered quite unnecessary by the disciples of this cult, inasmuch as three or four ideas, known in advance to lead to sexual causes, suffice to meet all wants.

Numerous communications received by Hoche report an intense and often persistent feeling of indignation on the part of the patients because of the reckless and shameless questioning to which they have been subjected, a feeling which often leads to an abrupt cessation of the treatment. This feeling is evident not only in those who are ill and morbidly sensitive, but also, it need hardly be added, in persons of an entirely normal, moral and esthetic make-up. What must we think of the wounding of the feelings of a sensitive and innocent nature when to a loving son or daughter is suggested an incestuous love for the mother? What injury can be greater than to give to one of the most beautiful relations in human life the most shocking and the vilest of interpretations? Harm also is done by fixing sexual associations in the patient's mind. Often this leads the patient baldly to associate every object that he sees with either the male or female genitals. Hoche's reports show, too, that engagements and wedded life have alike been shattered, destroyed by psychanalysis. Most serious of all, perhaps, is the poisoning of the minds of youthful patients. In more than one instance, cases came to light in which illicit sexual living resulted from the procedure, at times indirectly, and at other times, monstrous as this seems, as a direct result of advice given. Besides this, Hoche found in his reports other very serious outcomes, such as venereal diseases and illegitimate pregnancies.

The attachment of the patient to the physician, so prone to occur in hysteric subjects if the physician be at all lax in his attitude, is peculiarly fostered by psychanalysis. There are the daily or almost daily, long-continued conversations on sexual matters extending over many months of time—sometimes as long as three years—conversations of the most intimate character, in which the patient, who is usually a woman, openly acknowledges her suppressed sexual desires and rehearses at length the memories connected with them. Human beings, men and women, are so constituted that intimate conversations on sexual matters cannot take place without being accompanied automatically by certain associated feelings and emotions, and when we reflect that the very object of the treatment is to lay bare the repressed desires of the patient and to bring about relief by an emotional discharge—the so-called "abreaction"—we cannot but feel that the relation between physician and patient is, as a writer in *Science* has recently expressed it, a quasisexual one, no matter how guarded it may be. No wonder that the patient often acquires an attitude of absolute dependence on the physician, of being utterly unable to get along without him. Again, because of the long-continued mental concentration on their inner selves, on their sexual experiences, the patients become incapable of giving their attention to other matters, incapable of following a daily occupation, incapable of attending to any consecutive duties. They lose their self-confidence; they can do nothing without asking the doctor; they must give him an account of every thought, every incident, no matter how trivial. That such persons frequently become useless to themselves and their families is not surprising. States of excitement also are occasionally induced in hysteric persons and also in patients suffering from other affections. Another effect is to create in the patient a fear which may acquire the force of an obsession, that in the recital to the physician or in making the record of the dream, she has forgotten something important, perhaps the most important thing in the entire matter. Depression, too, especially is fostered in those who already entertain delusions of self-accusation with a sexual content. The constant questioning of the patient on sexual matters, the constant delving for new sexual material, confirms the patient in her morbid self-accusation. Several cases have, according to Hoche, terminated during such periods of depression in suicide.

PSYCHOGENIC FACTORS

In the earlier portion of this address, I endeavored to estimate briefly the value in etiology of psychogenic factors in general and clearly pointed out that for the most part this value is incidental only, that the underlying neuropathy is the real factor of importance. Again, in order to see the sexual psychogenic factors in their proper perspective, we must view the psychogenic factors as a group. The various complexes that enter into the conscious make-up of human life readily range themselves about our primal instincts. These, as I have elsewhere pointed out, may be enumerated briefly as follows: First, the instinct of self-preservation; second, the instinct of perpetuation of the species, and third, the instinct of communal preservation and perpetuation. The first embraces complexes dealing with food and the protection of the person; the second embraces complexes dealing with the sexual life; the third embraces complexes dealing with the relations of the individual to the community. In number and variety the last-mentioned greatly exceed those of the other groups; indeed, they are multiple and complicated in the extreme. Further, the relations of the individual to the members of the community are exceedingly close and the interchange of function unceasing. As a matter of fact, disturbances of the complexes dealing with these relations are far more numerous than of those dealing with self-preservation, or with sex; they are typified in the paranoid states. Again, disturbances of the complexes dealing with self-preservation — namely, delusions in regard to food, digestion, the viscera, etc., also are found in far greater number in the asylums than disturbances of the complexes dealing with sex. The latter require to be unearthed and, indeed, from that extramural material — the mass of cases outside of the asylums — of which hysteria is typical and which yields so redundantly all that is sought for.

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Psychanalysis is an outcome of the general mystic tendency of the modern world. Occultism and symbolism in art, music, literature and the drama—cubism, futurism, modernism, the problem play—are all expressions of this tendency. On what basis are we to explain such phenomena? Factors which influence the social condition, the mode of living, of great masses of people, all have to do with this psychopathic tendency. Among them we may enumerate the strain of modern living, the strain of the adaptation required by rapid rise in social level with its unaccustomed demands and new dissipations, the strain of the struggle of those who have not yet achieved their goal, and to this we should add the lateness of marriage and the difficulties of living a normal, a physiologic, a complete life. Under these circumstances the less stable and weaker minds lose their moorings. That which is old and has perhaps been acquired slowly, with difficulty and at great cost is forgotten. Truth is rejected for no other reason than that it is old.[2] New things are accepted for no other reason than that they are new. There is an abandonment of all previous standards. The mind is unhinged and takes refuge in mysticism. The real gives place to the unreal, the beautiful to the unbeautiful, the wholesome facts of life to the morbid untruths of disease; actual experiences are belied by pathologic illusions; the evidences of the senses are replaced by the phantasms of exhaustion. To the jaded and blasé psychopathic patient, to the chronic hysteric, psychasthenic, hypochondriac or what not, to the patient who has tried all sorts of procedures, psychanalysis presents something new, something interesting, something pruriently exciting.

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A very satisfactory percentage of recoveries may be expected if we will enhance our diagnostic acumen, develop a keener sense of comprehension, a prompt recognition of certain initiatory signs and a ready interpretation of the significance of those early manifestations. It is not to our credit that Nature has occasion to call so vainly for assistance. That she is signaling for help is indubitable, and I am convinced that it is not a cipher message either. Clearly then it is our duty to apprehend the signal and to render efficient aid with prompt and timely operations.

Given a case in which a person has been kicked by a horse, has fallen on a blunt object striking the abdomen, has been run over by the wheel of a wagon or has sustained some other typical mishap consequent on which a rupture of the intestine has ensued, and I know of no better method of procedure to insure the patient's death than to wait for reaction to take place, giving morphin as soon as pain manifests itself in order effectually to mask developing symptoms of importance; to await the exhibition of the absolute signs of rupture, namely, vomiting, costal respiration, tympany, distention, loss of liver dulness, generalized tenderness, declining temperature, high pulse-rate, the higher the better, and above all the hippocratic facies, and then to operate, when death may confidently be anticipated either on the table or very soon thereafter.

SYMPTOMS OF INTESTINAL RUPTURE

A detailed consideration of the symptoms is worthy of attention:

Shock varies from very slight to the most profound. In some cases there is no deepening of the little shock that slowly succeeded the accident, while in others the shock swiftly increases with a rising pulse and a declining temperature; this divergence of the pulse and temperature is always a grave symptom. The absence of shock is inexpressive.

Vomiting is common though not constant. The more persistent the vomiting the more consequential is the sign. This symptom is due to the irritation of the peritoneum by the effusion of intestinal contents, and occasionally comes on early, though not infrequently it is long delayed, more especially if the intestinal contents are expelled directly into the pelvic basin.

Obstipation is very common in these cases, though often a slight amount of fecal matter may be voided from the lower bowel following an enema, as is seen in some cases of intestinal obstruction. This symptom loses some of its value, as we have a similar picture in traumatic or paralytic ileus. Moreover, in a suspected case the means essential to establish the existence of this symptom would not with propriety be pursued.

Frequent urination has been observed, and results from peritoneal inflammation in the paracystic region. It is a rare and a late symptom.

Pain is usually intense, localized or general. At times it is localized to the umbilical region or lower abdomen, rarely over the seat of injury, though more often it is generalized. Pain arises from peritoneal irritation, and hence is a constant symptom though varying in intensity; it appears early and continues unabated. It is deprived of some of its worth in this as in other conditions, by reason of the variable degree of pain endured by different persons before complaint is made.

The pulse is usually slow at first, gradually and *steadily rising*, though cases are on record in which a normal pulse was displayed for several hours post trauma. An increasing pulse-rate is a valuable indication, but it is to be remembered that it may not be initiated until late, at which time it is indicative of peritoneal absorption.

The respiration is said to be characteristic, of thoracic type and shallow. This I have not observed, surely not early enough to be of value. Should it be present it would be very significant, but its absence is insignificant.

The temperature is but slightly elevated within several hours, and as is well known results from toxic absorption, thus being of necessity a tardy symptom and not available for early diagnosis.

Formerly much stress was laid on the facial expression, but inasmuch as the peritonitis needs to be far advanced before the patient looks bad, this symptom is valueless except that its presence usually signifies impending death.

Loss of liver dulness, dependent as it is on the presence of gas in the abdomen, occurs usually as a late sign; so late that it is of trifling value. Furthermore, it may be simulated by a marked meteorism.

Abnormal areas of dulness consequent on hemorrhage may be present. This is more likely to occur if the intestine is torn from its mesentery, thus favoring hemorrhage from a large branch of one of the mesenteric arteries, or it may result from a concomitant rupture of the liver or spleen. Otherwise the symptom would be tardy, and then too might be due to effusion and plastic lymph. Should it appear early it would doubtless be accompanied by other unmistakable signs, so that its worth as an early symptom is inconsiderable.

Rigidity of the abdominal muscles is one of the most constant symptoms. It is almost, if not quite, impossible to conceive of a lack of effort by Nature to protect the subjacent structures in so serious an injury, unless prevented by intense shock, unconsciousness or profound alcoholism. It follows, therefore, that it is an invaluable sign in a suspected case, and should it continue for a few hours constitutes alone sufficient evidence on which to base a diagnosis of probable rupture, and to indicate surgical intervention. It is not subordinate in importance to any other symptom.

Local tenderness is of great value if one be able to eliminate superficial injury sufficient to explain the sensitiveness, and happily, there often is slight or no injury to the overlying structures. Besides, the tenderness rapidly increases in severity and in area.

WHEN IS OPERATION WARRANTED?

The longer the time since the accident and the more numerous and the more marked the symptoms, the easier the diagnosis and the greater the security felt in such diagnosis; and conversely, the shorter the time since the accident, the fewer the symptoms, and these perhaps not very evident, the greater the difficulty of diagnosis. But it is just at this early period when the symptoms are often slight and the conclusion most difficult that the important decision should be made if we are to reduce the mortality-rate to its legitimate rank. As has been mentioned, many of the symptoms declare themselves late, and when they do appear do not herald the rupture itself, but proclaim the complicating peritonitis which procrastination has made possible. The only disparity of opinion arises relative to the diagnosis; or more accurately, the disagreement is in regard to what minimum symptoms justify operation. Once the diagnosis is made, we are all agreed that the importance of prompt and expeditious operation cannot be overemphasized.

The history of the case may now and then be misleading, for it might be assumed that the vulnerating force was insufficient to produce rupture, and yet a rupture be present. This is the more likely to happen in the case of hernia with contents, in which event even a slight blow over the hernia could produce rupture of the intestine by reason of its being closely confined with no opportunity of hasty escape. Nevertheless, the history is obviously of primary importance. Frequently no external sign of injury such as bruise, laceration or abrasion of the skin exists, so that the amount of injury to the abdominal wall gives not the slightest indication of the degree of visceral damage. Further, any injury to the abdomen may be associated with grave damage to the intestine.

Few of the other serious conditions are likely to be confounded with traumatic rupture of the bowel. Intra-abdominal hemorrhage may for a time simulate this condition, but one would expect to find the signs of hemorrhage most marked, namely, air-hunger, anemia, blanched skin, thirst, restlessness, faintness, free fluid in the abdomen, etc. Of course, both conditions may be coexistent. Nevertheless, the differentiation between these two conditions is not of the utmost importance as the treatment is prompt surgical intervention in both, and a surgical diagnosis is sufficient in such cases; in fact, much valuable time may be wasted by an effort at too refined discrimination. Take, for example, a man who has been kicked by a horse but has not sustained a serious intra-abdominal lesion. What occurs? He is knocked down or thrown a few feet, the "breath is knocked out of him," he is pale, has a weak pulse, is dyspneic and looks distressed; he may even vomit; but within a little while he recovers his color, his pulse becomes normal, his respiration is easy and he looks and feels well. In other words, he recovers his usual feeling of well-being in a short time with a subsidence of all symptoms. Take, on the other hand, one who under the same circumstances has sustained a rupture of the intestine. Some of the symptoms disappear, but some of the more important incipient symptoms endure; he does not feel much better even after two or three hours; the symptoms do not disappear, though they usually subside somewhat. That is to say, we have a persistence of the initial symptoms, particularly rigidity and pain, though the pain may be slight. *This persistence of the initial symptoms with the history is sufficient to warrant operation.*

To discover the early signs and in order to detect their continuance, which is so momentous, these patients require the most observant supervision during the early hours following injury. The presence then of rigidity with pain or tenderness leads to a diagnosis of probable rupture and is sufficient to defend the propriety of exploration. Finally, the danger of an infrequent needless operation is a nullity contrasted to the frolic with death by delaying surgical intervention in the case of rupture.

Varieties of Authors.—It may be said that there are three kinds of authors. First come those who write without thinking. They write from a full memory, from reminiscences, it may be, even straight from other people's books. This class is the most numerous. Then come those who do their thinking whilst they are writing. They think in order to write, and there is no lack of them. Last of all come those authors who think before they begin to write. They are rare.—Schopenhauer.

DUODENAL TOXEMIA FOLLOWING RUPTURE OF THE DUODENUM

WITH REMARKS ON EXTRAPERITONEAL RUPTURE AND A REPORT OF TWO CASES *

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That a toxemia other than bacterial is a factor in the mortality of extraperitoneal rupture of the duodenum, an observation of two cases has convinced me. The fact that there was something different from the ordinary type of death from peritonitis was evident. The notes on the history sheets were made independently, and it was only later that the similarity of the observations was appreciated. The picture was especially emphasized in the second case in which the following statement was made evidently as a summary before the history was filed:

> The appearance of the patient was almost suggestive of delirium tremens or more of an active toxemia. There were no positive signs of peritonitis, no vomiting and the bowels moved freely. The patient presented the appearance of death from toxemia other than bacterial.

The well-known observations and studies of Maury,[1] Matthews[2] and others give emphatic support to this assumption. Whether the toxin comes from the secretion of the mucous membrane of the duodenum or from the bile which has not been rendered harmless by dilution and colloidal suspension or from the pancreatic juice may be open to discussion. In relation to possible death from pancreatic secretion it may be said that in only two cases, one of my own and one other, have I been able to find a fat necrosis, although Richter[3] has proved experimentally that a perforation of the duodenum may give rise to a fat necrosis. Wilms has drawn attention to the fact that high intestinal obstruction produces death with extreme rapidity and suggests that the patients succumb to toxic absorption resulting from decomposition of stomach and intestinal contents — an assumption that, it would seem to me, lacks clinical or experimental support.

In both of my cases the post-mortem confirmed the belief that there was not a peritonitis sufficient to cause death. The second patient did not vomit after the operation, his bowels moved freely, and yet death supervened at the end of fifty hours. The case histories are appended.

A study of the literature served to emphasize the high mortality in rupture of the duodenum. In the ninety-four cases studied there have been only seven recoveries. This may be partly explained by the toxemia complicating this condition as noted above; but a considerable part must be attributed to the failure of diagnosis and to the inability of the surgeon to suture these ruptures by exposure after Kocher's method. I experienced the same difficulty in the first case, but in my second I fell on the method I have described elsewhere, by which the duodenum was mobilized through an incision in the posterior colic mesentery to the right of the duodenum. I was surprised at the simplicity and freedom of exposure.

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* Read before the Western Surgical Association, St. Louis, Dec. 20, 1913.

[1] Maury, W. D.: Death in Acute Intestinal Obstruction and Kindred Conditions, Due to Physiologic Disturbance. Study I. Has the Duodenum a Toxic Internal Secretion? The Journal A. M. A., Jan. 1, 1910, p. 5; Is Death in High Intestinal Obstruction due to Absorption of Bile? Ann. Surg., 1907, xlvi, 567.

[2] Matthews, S. A.: One of the Functions of the Duodenum. The Journal A. M. A., July 23, 1910, p. 293.

[3] Richter, H. M.: Perforating Duodenal Ulcer with Fat Necrosis. Quart. Bull. of Northwestern Univ. Med. School, xii, 131.

A study of the cases shows that extraperitoneal rupture especially is rarely discovered at operation. Meerwein,[4] who reports sixty-four cases of all types of duodenal rupture, notes that of the twenty-eight cases with operation, in six the rupture was not found until postmortem. In a collection of twenty-four reports of cases from various London hospitals by Berry and Giuseppi,[5] thirteen patients had been operated on and the rupture discovered in seven only, while in six the rupture had been overlooked to be found at post-mortem. Furthermore, a review of these cases shows that practically all cases discovered were intraperitoneal ruptures. Most of the extraperitoneal were overlooked at operation, an error which would have been avoided by routine examination and, if necessary, exposure of the third portion of duodenum. The necessity for this is emphasized when we find that duodenal rupture is much more common than ordinarily supposed. Thus Gage reported 10 cases in 78 intestinal ruptures; Hertle,[6] 15 in 86, and Berry and Giuseppi, 24 in 132. Therefore, one should urge most careful observation of the duodenum in all traumatic cases. The transverse colon and omentum should be turned up so as to give a perfect exposure of the root of the mesentery and the retroperitoneal duodenum.

It is unnecessary here to enter into a complete discussion of the symptomatology, diagnosis and treatment of rupture of the intestine. It may be in place, however, to emphasize some of the salient features pertaining to rupture of the duodenum.

A study of the combined series of cases of intestinal rupture of Berry and Giuseppi, and Hertle, 132 and 136, respectively, should give a fair example of the various etiologic factors, since they are collected from ity hospitals on one hand and from the literature on he other. The summary follows:

Blow	70
Run over	61
Kick	56
Squeeze	33
Fall	31
Miscellaneous	17
Total	268

Thus we see that approximately 70 per cent. comes from blows, run-overs and kicks. One should formulate a general rule that rupture is to be suspected in any njury in which there is a violent impact of a hard subtance against an abdominal wall which occurs so suddenly that the muscles are caught unawares, as it were, and have not time to contract and protect the abdominal contents. The duodenum, though but a few inches in length, because of its fixed position in front of a bony promontory is especially liable to injury — Berry and Giuseppi, 20 per cent. of cases; Hertle, 13 per cent.

SYMPTOMS AND DIAGNOSIS

While the diagnosis is often difficult, in a majority of cases it can be made if certain facts are borne in mind. The diagnosis will stand or fall, generally on five factors: First, the history of a severe sudden blow on the abdomen; second, abdominal rigidity; third, severe pain; fourth, local tenderness; fifth, insult vomiting. These are mentioned in the order of their importance.

Without the presence of sectional or general rigidity, we must be slow to make the diagnosis, except in retroperitoneal ruptures; and it is here particularly that the duodenum comes into question. It is the most important and valuable sign. Almost all of the patients complain of severe and continued pain. The histories again and again note the pain as "excessive," "severe," "intense."

Localized tenderness is also of great value, particularly in retroperitoneal-duodenal rupture. Nausea and vomiting shortly after the injury, which I have elsewhere designated as "insult vomiting," is also a valuable sign.

I have particularly excluded shock from the essential signs since it is frequently absent, and its presence aids us little in arriving at an opinion. The vomiting, distention and other signs of a subsequent peritonitis are also omitted. Berry and Giuseppi have made the following classification of the symptoms in fifty-nine of their cases:

	Present	Absent
Severe pain	51	..
Vomiting	43	2
Shock	28	6
Local tenderness	35	2
Rigidity	50	4
Distention	11	14
Added dulness	18	14
Rising pulse	37	6

Intraperitoneal rupture of the duodenum shows the symptoms above numerated plus the signs of a rapidly developing toxemia, a rapidly rising pulse, often with an active delirium. Extraperitoneal rupture lacks at times the abdominal rigidity, but the tenderness here is localized, the pain and distress is great, and if operation is delayed, a rapidly developing toxemia is present and vomiting is more constant.

TREATMENT

Experience and judgment both teach that an immediate laparotomy is indicated in all cases in which there is any probability of rupture, and in the ordinary case the general principles of intestinal surgery should be followed. In rupture of the duodenum, however, there are several factors to be considered: First, the possibility of overlooking the rupture; second, the possibility of gangrene of the loop; third, the probability of retroperitoneal infection; fourth, the fact that the sutured bowel has no peritoneum covering it; fifth, the probability of toxemia from duodenal and pancreatic secretions.

The mortality in these cases has been much higher than in rupture of any other part of the intestine. In the statistics of all types, the mortality of Berry and Giuseppi was 87.2 per cent.; Hertle, 76.8 per cent.; Tavaststjerna, 76.4 per cent., while in the cases of ruptured duodenum of which I have been able to collect reports (ninety-four), there have been only seven recoveries, although Moynihan's patient, who lived 104 days and died of an obstruction due to a Murphy button, should be numbered in the recoveries. On the other hand, in Meerwein's case the serosa only was torn. These reports of cases were collected from literature and so were exceptional cases. Of the twenty-four consecutive cases reported from the London hospitals there was no recovery.

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[4] Meerwein: Beitr. z. klin. Chir., 1907, liii, 496.

[5] Berry, James and Giuseppi, Paul L.: Traumatic Rupture of the Intestine, with a case of Recovery after Operation and an Analysis of the 132 Cases that Have Occurred in Ten London Hospitals During the Last Fifteen Years (1893-1907). Proc. Roy. Soc. of Med. London, 1908, ii, Surg. Section, p. 1.

[6] Hertle: Ueber Stumpfe Verletzungen des Darms und des Mesenteriums (Full bibliography) Beitr. z. klin. Chir., 1907, liii, 257.

There is reason to hope, however, that if the surgeon is alive to the possibility of the injury, and searches for it in the manner suggested, the mortality may be materially lessened.

Lesions of the first and second parts may be exposed by Kocher's method, and those of the third part can easily be treated by the method of mobilization I have described.

What should be done after the rent is exposed? Is simple suture sufficient or should we resect and do a duodenojejunostomy or this with a gastrojejunostomy? A study of the reported recoveries should be of value.

1. Herczel found a rupture at the junction of the duodenum and jejunum. He sutured the rent after four days.

2. Meerwein[4] found an incomplete rupture, the serosa alone being torn. There was a large retroperitoneal hematoma. He resected from the middle of the descending part to the flexure, did a posterior gastro-enterostomy and a duodenojejunostomy 60 cm. from the gastrojejunostomy, operating seven hours after injury.

3. Steinthal found the duodenum torn from the posterior wall and from the jejunum. He operated eight and one-half hours after the injury, sutured the bowel, did a gastrojejunostomy and drained posteriorly.

4. Dumont found a tear at the duodenojejunal flexure.. He did an oblique suture and drained anteriorly. Operation thirty-two hours after injury.

5. Wolf[7] found a tear at the junction of the horizontal and ascending parts. He sutured the tear. Operation one and one-half hours after injury.

6. Winiwarter[8] found a tear in the third part, sutured and drained anteriorly nine hours after injury.

7. Ropke[9] found a tear in the third part. He sutured the proximal end into the jejunum and the distal end into the stomach, made a cecal fistula to flush the bowel and closed the abdomen two hours after injury.

From these we may argue that if the tear is not extensive we may be justified in a suture even though the rupture is extraperitoneal, but that in bad cases gastrojejunostomy and a duodenojejunostomy are indicated. Drainage may be either anterior or posterior as the case may demand.

I append a brief summary of two cases observed in my service at Wesley Hospital.

Case 1.—J. G. (No. 32,945), was admitted to hospital July 14, 1912. Fifty-two hours before entering the hospital, patient was kicked by a horse. The blow struck him in the median line just below the umbilicus. He fell and could not get up but was conscious, and was taken home in a buggy. He vomited two hours after being taken home, at first vomitus was of stomach contents. Patient said he took some black medicine and threw it up, giving a black vomitus. There was no other history which would lead us to believe there was blood in the vomitus. Vomiting continued accompanied by nausea and soon became fecal in character. Patient complained that stools were black. (This might have been due to the medicine taken.) Pain was constant and did not radiate. There was tenderness all over the abdomen, most marked above. Temperature was 102.8, the respirations 40, pulse 120; white blood-cells, 20,700, excess polymorphonuclear in type.

Immediate operation was performed and a perforation 4 inches below the pylorus, with laceration of the mesentery, was found. There was free blood-stained fluid in the abdomen. Mesentery was sutured, examination of the abdomen made and the duodenal rupture sutured with much difficulty. Kocher's method of exposing the duodenum was used, but owing to adhesions present from a previous infection of some type, the operation was difficult and the result unsatisfactory. The abdomen was closed in the usual manner, with drainage. Patient died six hours after the operation. (The history notes that the patient was not an alcoholic.)

Post-mortem disclosed peritonitis about the wound in the intestine only. There was no general peritonitis, but a violent injection of the peritoneum, and the subperitoneal tissue was very edematous.

Case 2.—F. S. (No. 41,477), was admitted to hospital thirty-four hours after injury. He was struck in the anterior abdominal wall, in the epigastric region, by a wagon-pole and crushed between the wagon-pole and a telegraph-pole. He vomited shortly after the injury and then again twelve hours after he received the injury, after which time he vomited repeatedly. He complained of severe pain in the epigastrium but continued to work until near noon. Patient slept little that night and entered the hospital the next afternoon at 5 o'clock. There was marked abdominal distention with tenderness especially marked in the right inguinal region, but also in the left inguinal region and epigastrium. There were no external signs of violence. Pulse was 126, respiration 32, temperature 97.

Gas-ether anesthesia was given. When the abdomen was opened the intestines were seen to be injected as by a violent irritant. There was a thin faintly bloody serum, not purulent or apparently infectious. A plaque of fat necrosis was noted on the hepatic flexure of the colon below the cecum. The entire retroperitoneal tissue, including the pelvic connective tissue, seemed to be doughy as if filled with serum, and a considerable tumefaction was noted in the right side of the spinal column behind the peritoneum. Diagnosis of extraperitoneal rupture of the duodenum was made. Peritoneal incision between the duodenum and colon. This exposed the duodenum freely, in which could be seen a longitudinal tear about 1½ inch in length on a level with the common duct and below. The retroperitoneal mass contained bile and intestinal contents which had extravasated down to the right inguinal region, thus explaining the tenderness noted there. The wound in the intestine was sutured with two layers of linen. Drainage was carried out posteriorly underneath the colon below the costal margin by a tube leading to the duodenum and a cigarette drain leading into the right inguinal region, both being under the colon and under the peritoneum. A rubber tube with gauze inserted was carried out at the lower angle of the abdomen. The wound was closed by figure-eight sutures.

Following the operation the patient was given large amounts of normal salt both subcutaneously and by rectum. His pulse rapidly rose from 126 to 160, respirations from 32 to 44 and temperature to 103. It is noted on the history sheet that "patient was placed in a restraining jacket," "unable to give continuous tap water by rectum on account of restlessness of patient," "patient delirious," etc.

On the day after the operation his bowels began to move; he did not vomit and at the end of fifty hours he died. Postmortem disclosed no peritonitis. The following note is on the history sheet: "The patient became very talkative and very restless, almost suggestive of delirium tremens, yet more of an active toxemia. There were no positive signs of peritonitis, no vomiting and bowels moved freely. The patient presented the appearance of death from toxemia other than bacterial. He was not an alcoholic. Death cardiac."

31 North State Street.

Community Health Conservation.—The best dollar any community spends is the dollar it invests in conservation of community life and health. It yields greatest and best returns.—*Bull. Chicago School of Sanitary Instruction.*

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[7] Wolf: Ein geheilter Fall von Duodenal Rupture. Deutsch. Ztschr. f. Chir., 1911, cxi, 282.

[8] Winiwarter Zwei Fälle von Duodenalverletzung. Deutsch. Ztschr. f. Chir., 1912, cxiii, 582.

[9] Ropke: Ueber die operative Behandlung der durch stumpfe Gewalt entstandenen Duodenal Verletzungen. Arch. f. klin. Chir., 1913, c, 925.

ULTRAVIOLET LIGHT AS A GERMICIDAL AGENT

EXPERIMENTAL INVESTIGATION OF ITS POSSIBLE THERAPEUTIC VALUE *

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As is well known, light-waves of sufficiently short wave-lengths are highly germicidal to bacteria suspended in mediums which are transparent to these waves. The question has arisen, therefore, whether or not it may be possible to make use of ultraviolet light in the treatment of local infections.

Ultraviolet light has long been successfully used by Finsen in the treatment of certain skin diseases, notably lupus vulgaris, and recently has been employed by ophthalmologists in the treatment of vernal catarrh and trachoma, also, it is asserted, with successful results. Its beneficial effect in these conditions, however, obviously is not necessarily due to a direct germicidal action, but possibly only to an irritant action on the tissues.

Since the cornea compared to other tissues of the body is relatively transparent to ultraviolet light, it follows that if it should prove impossible by this means to destroy bacteria within corneal tissue without at the same time producing undue injury to the tissue itself, the same negative results would be obtained in the case of all other tissues. For this reason the present investigation was confined to experiments on the cornea. These experiments were made in connection with an investigation by Louis Bell and myself on the effect of ultraviolet light on the normal eye, advantage being taken of the powerful light sources and apparatus therein employed.

Hertel,[1] in 1903, reported the successful use of ultraviolet light in the treatment of corneal ulcers, asserting that here it had a direct germicidal action on the infecting bacteria. He also made some interesting experimental observations in this connection, the most important one from a therapeutic point of view being that he was able to abolish the motility of cholera bacilli enclosed in a quartz cell and placed within the anterior chamber of a rabbit's eye, by exposing them to the action of ultraviolet light passing through the cornea. The source of the light was a magnesium electrode giving off rays with wave-lengths from 0.28 to 0.309 microns, and the exposures were from twenty-five to thirty minutes. The current was from 3 to 4 amperes. Later he obtained the same result with his cadmium-zinc electrode. Hertel assumed that the bacteria were actually killed, but he did not state that this was demonstrated by means of cultures. He also did not exclude the possibility that the effect on the bacilli was due to heat.

Hertel, in addition, tested the therapeutic action of ultraviolet light on a series of rabbits' eyes in which he had produced staphylococcic corneal ulcers and obtained "pleasing results." The resulting scars were slight and no changes could be found in the depths of the eyes. These results, however, it seems to me, lose any possible significance when it is considered that staphylococcic corneal ulcers artificially produced in rabbits as a rule promptly heal without any treatment, as I have frequently observed.

Hertel maintains that light of short wave-lengths has a greater deleterious effect on bacteria than on tissue-cells. This may be true for very short waves, but it is certainly not true for waves which are able to pass through the cornea. Thus, I found that severe keratitis could be produced by exposing the cornea through a crown screen to a quartz mercury-vapor lamp at a distance of 20 cm. for one and one-half hours, whereas staphylococci suspended in distilled water and exposed under the same conditions were not killed in six hours.[2] This experiment also would seem almost alone sufficient to prove the impossibility of destroying bacteria within the clear cornea without producing too much injury to the corneal cells. This being the case, it is almost inconceivable that bacteria could be destroyed in a cornea infiltrated with pus-cells and so made practically impassable to germicidal waves.

Hertel also attached importance from a therapeutic point of view to the conjunctival hyperemia and cell irritation produced by ultraviolet light. The practical value of these factors is questionable, and the latter factor would seem more likely to do harm than good in the case of corneal ulcers in which the cells already have sufficient unfavorable influences to contend with. In any case they would not justify the use of ultraviolet light in treatment of such conditions in the absence of any germicidal effect of the light.

In a later communication, Hertel[3] reported in detail a series of clinical cases of corneal ulcer treated by means of ultraviolet light from a cadmium-zinc electrode. The latter he recommended as being equal in efficiency to the magnesium electrode and at the same time more practical to use. Twenty-six cases were treated with light therapy alone, 8 cases with light therapy followed by Saemisch section, and 13 cases with light therapy followed by cauterization or the latter and Saemisch section. Thus in 21 out of his 47 cases of corneal ulcer, the result of the light therapy was so unsuccessful that cauterization or Saemisch section had to be undertaken. These results do not seem impressive for an agent that is supposed to kill the bacteria within the ulcers. Hertel exposed his cases from three to five minutes two or three times daily. At the most this was equivalent to a daily total exposure of only fifteen minutes. Now he had found that it required from twenty-five to thirty minutes to kill (or inhibit?) bacteria exposed through a perfectly clear cornea. How then could it be expected that an exposure of fifteen minutes would suffice to kill them in a purulent infiltrate which acts as a far more effective barrier to ultraviolet light?

In a communication to appear later, Louis Bell and I show that interrupted exposures to ultraviolet light with intervals of less than twenty-four hours have practically the same effect on the cornea as a continuous exposure of the same total length. For this reason by frequently repeating his exposures, Hertel undoubtedly increased the injury to the corneal tissue without at the same time, in all probability, obtaining a corresponding increase in germicidal action.

In his experiments and in the treatment of his cases Hertel employed no screens. Thus the cornea had not only to contend with the rays that could penetrate it,

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* From the Pathological Laboratory of the Massachusetts Charitable Eye and Ear Infirmary.

[1] Hertel, E.: Experimentelles über ultraviolettes Licht, Ber. ü. d. 31 Vers. d. ophth. Ges., Heidelberg, 1903, p. 144.

[2] It is important to note that for these long exposures it is necessary to keep the bacterial container surrounded by cool water, as otherwise the bacteria may be killed in an hour or so by the accumulated heat. The lamp and screen used in this experiment are described later.

[3] Hertel, E.: Experimentelles und klinisches über die Anwendung lokaler Lichttherapie bei Erkrankungen des Bulbus, Arch. f. Ophth., 1907, lxvi, No. 2, p. 275.

but also with those stopped within the stroma and at the surface. As the rays stopped near the surface are evidently useless so far as killing bacteria within the stroma is concerned, it occurred to me that by screening them out and so decreasing the damage to the cornea, longer exposures might safely be used, thereby increasing the possibility of a germicidal effect within the cornea. The screen selected for this purpose was a crown glass, which permitted only waves greater than 0.295 microns in length to pass.[4] As will be seen, however, this procedure was unsuccessful. No germicidal effect on bacteria within the cornea could be noted even when exposures through this screen were used which were sufficient to produce severe keratitis and even injure the epithelium of the lens capsule.

As light sources in the following experiments the magnetite arc and the quartz mercury-vapor lamp were chiefly used. To obviate the remote possibility that the cadmium-zinc arc employed by Hertel might possess some special advantage, this arc was also used. That greater intensity was obtained with our cadmium-zinc arc and quartz lens than was obtained by Hertel is proved by the fact that not only severe keratitis but also marked changes in the epithelium of the lens capsule were produced.

The mercury-vapor lamp used was the Cooper-Hewitt model without the globe (220 volts, 3.5 amperes).

The magnetite arc was of the ordinary self-regulating type as known to trade, without the globe. The voltage was about 80, the amperage from 9.8 to 10. The light was passed through a quartz water-cell 5 cm. in thickness, and concentrated on the cornea by means of a quartz lens 4 cm. in diameter and 9 cm. in focal length, placed 20 cm. from the light source. In Experiments 6 and 7 still greater intensity was obtained by means of a second quartz lens 23 mm. in diameter and 15 mm. in focal length.

In the case of the cadmium-zinc arc, the same apparatus was used except that the electrode consisted of an alloy of equal parts of cadmium and zinc in a thin-walled copper cylinder, and was water-cooled. The water-cell was omitted. The voltage was about 80, the amperage about 6.8.

A number of experiments were first made by injecting staphylococci or pneumococci into the corneas of rabbits and after twenty-four hours exposing the resulting abscesses to the ultraviolet light. Healing did not seem to be hastened, but since recovery ultimately occurred, as it did also in the control eyes, these experiments are not regarded as sufficiently conclusive and are not given in detail. Experiment 1, however, in which tubercle bacilli were injected into the cornea, was perfectly conclusive since the resulting lesions continued to progress in both eyes alike. In the other experiments the exposures were made immediately after the injections, that is, with the corneas clear, so that the conditions were the most favorable possible for germicidal action of the light. The results in these experiments, moreover, are clear-cut, because if the light had killed the bacteria, abscesses would not have formed. This is proved by Experiment 2, in which in the control eye the bacteria were first killed by exposure to ultraviolet light before they were injected into the cornea.

EXPERIMENTS

Experiment 1.—April 10, 1912, a suspension of virulent tubercle bacilli is injected into each cornea of a rabbit.

May 1, each cornea shows a small tubercle. The right eye is exposed to the quartz mercury-vapor lamp through crown screen 1½ hours at 20 cm.

May 21, both tubercles have developed as usual. The animal is killed.

Experiment 2.—June 22, 1912, a suspension of *Staphylococcus aureus* in distilled water is injected superficially into the left cornea of a rabbit. The remaining bacterial suspension is then exposed at 20 cm. for three minutes to the quartz mercury-vapor lamp. (Culture taken proves that all organisms have been killed.) This suspension of killed staphylococci is then injected into the right cornea of the same rabbit.

Each cornea is exposed to the quartz mercury-vapor lamp at a distance of 0.5 meter for fifteen minutes.

June 23, both eyes show marked electric ophthalmia. The left cornea shows well-marked abscess. The right cornea shows only a faint haze along the tract of the needle.

June 24, both eyes show increase in electric ophthalmia, with haze of corneal stroma and central loss of corneal epithelium. The abscess of the left cornea has increased in size and there is now hypopion. The right cornea shows no abscess. Enucleation is performed.

Experiment 3.—Oct. 21, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into each cornea of a rabbit, the amount injected into the right cornea being three times that injected into the left. The left eye is then exposed for thirty minutes to the cadmium-zinc arc through a quartz lens (no water-cell or screen of any kind being used).

October 22, the right eye shows intense inflammatory reaction, with a large abscess of the cornea and pus in the anterior chamber. The left eye shows equally intense inflammatory reaction and a corneal abscess about half the size of that in the right cornea. The abscess shows discrete points evidently corresponding to colonies of bacteria.

October 23, abscesses of the two corneas are now about equal in size, (3 mm. in diameter). The anterior chamber of each eye contains pus. Epithelium is entirely absent from the left cornea (this being confirmed by microscopic examination). The right cornea shows loss of epithelium only in the vicinity of the abscess. Enucleation is performed.

The lens capsule of the right eye after fixation in Zenker's fluid is examined in flat preparation and shows slight changes in the nuclei of the epithelium evidently due to the action of staphylococcus toxins, but no changes similar to those seen after exposure to ultraviolet light. The lens capsule of the left eye shows, in addition to these nuclear changes, well-marked changes characteristic of exposure to ultraviolet light —swelling and granular degeneration of the cytoplasm of the epithelial cells. Histologically both corneas present the same picture, and each contains numerous large masses of staphylococci.

Experiment 4.—Feb. 8, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into each cornea of a rabbit. The left cornea is then exposed for thirty minutes to the cadium-zinc arc *through a crown screen* and quartz lens, the image being kept on the injected area.

February 10, there are abscesses of equal size in the two corneas. The left eye in addition shows severe electric ophthalmia with marked general haze of cornea and large central loss of epithelium which includes area of abscess. This eye also shows exudate adherent to the posterior surface of the cornea behind the site of the abscess, due evidently to injury of the endothelium by the ultraviolet light. Enucleation is performed.

The lens capsule of the left eye, after fixation in Zenker's fluid, is examined microscopically in flat preparation, and shows marked changes characteristic of exposure to ultraviolet light.

Experiment 5.—March 19, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into the cornea of a rabbit. The cornea is then exposed to the magnetite arc for forty-five minutes through the quartz lens, quartz water-cell, and crown screen. This exposure in the case of normal eyes had been found sufficient to cause necrosis of the stroma cells and endothelium of the cornea, to cause hemorrhages in the iris, and to produce marked changes in the lens capsular epithelium.

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[4] Since this wave-length has been found to be the limit of transparency for the cornea, it would be expected that such a screen would protect the cornea from injury, the longer waves not being absorbed by the latter. As a matter of fact I have found that it does almost completely protect the corneal stroma, but permits severe injury or destruction of the epithelium, corneal corpuscles and endothelium.

March 20, there is abscess of the cornea. Marked electric ophthalmia is noted with loss of epithelium.

March 24, the abscess is larger. Enucleation is performed. Lens capsular epithelium (flat preparation) on microscopic examination shows marked changes, and the iris shows numerous hemorrhages characteristic of exposure to ultraviolet light.

Experiment 6.—Dec. 16, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into the cornea of a rabbit. The injected area is then exposed twenty minutes to the magnetite arc through a water-cell and a system of two quartz lenses. No screen is used.

As previously determined, with this arrangement an exposure of thirty seconds is sufficient to cause marked keratitis and destruction of the epithelium, while an exposure of twenty minutes causes complete destruction of the corneal corpuscles and softening and swelling of the stroma down to Descemet's membrane, and ultimately leads to vascularization and cicatrization of the cornea.

December 18, there is no abscess. Marked electric ophthalmia is noted. The cornea is hazy and epithelium is absent from three quarters of the surface of the cornea.

December 26, there is no abscess. The inflammatory reaction is almost gone. The cornea is softened and swollen.

December 29, the inflammatory reaction is increasing again (reaction of repair); the corneal tissue is very soft. Vascularization is well advanced.

Jan. 5, 1914, vascularization of the cornea is complete. The inflammatory reaction is subsiding.

January 9, the vessels are beginning to disappear. The cornea is leukomatous.

Experiment 7.—Dec. 19, 1913, the suspension is injected and the exposure made as in Experiment 6, except that the time of exposure is six minutes. This exposure is sufficient to cause softening of the corneal stroma.

December 21, marked electric ophthalmia is noted. There is an abscess at the site of the injection.

December 23, the abscess is smaller. A culture is taken. Enucleation is performed.

Culture shows abundant growth of staphylococci. Lens capsular epithelium shows marked changes.

CONCLUSIONS

The results of these experiments prove conclusively that ultraviolet light cannot under any conditions destroy bacteria within the cornea, even when the latter is perfectly transparent, without at the same time severely injuring the corneal tissue. Destruction of bacteria within the transparent cornea was obtained only when a light intensity and exposure were employed sufficient to cause complete destruction of the corneal corpuscles and intense injury to the corneal lamellae (Experiment 6).

Moreover, it does not seem possible that ultraviolet light could in practice be successfully used to destroy bacteria within a corneal abscess or ulcer, that is, when the cornea was no longer clear, even with the sacrifice of corneal tissue, as in the case of the actual cautery. For either the exposures would have to be impracticably prolonged, or such extreme intensity of light would be required that the heating effect would exceed that of the pure ultraviolet action. It is doubtful also if ultraviolet light of such intensity could be made available for therapeutic purposes.

It must be concluded, therefore, that so far as direct destruction of bacteria within any of the tissues of the body is concerned, ultraviolet light possesses no therapeutic value.

101 Newbury Street.

A PRACTICAL METHOD FOR DETERMINING THE AMOUNT OF BLOOD PASSING OVER DURING DIRECT TRANSFUSION *

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It is obvious that it would be a great improvement in the therapeutic application of direct blood transfusion if there were some accurate method of determining, during the actual course of the transfusion, how much blood is being transfused. As with all forms of medication, so with transfusion, the correct dosage may be the determining factor in obtaining a proper therapeutic result.

Up to the present there has been no such method, and surgeons have generally followed some rough and ready rule, such as to transfuse for from fifteen to forty-five minutes, or until the donor showed distinct signs of acute anemia, or until the percentage of the patient's hemoglobin showed a rise.

An accurate method of estimating the amount being transfused would be of especial importance from two points of view: (1) in order to avoid any danger to the donor from the taking of an excessive amount of blood; (2) to determine when the patient has received enough to obtain the desired therapeutic effect.

Earlier studies on the blood-pressure of both patient and donor during transfusion have convinced us that variations in the blood-pressure are too irregular to be of the slightest assistance in determining the amount of blood which is being transfused. In fact, the compensatory powers of the body, in regard to the blood-pressure, are rather remarkable, the pressure of donor and patient often remaining practically unchanged in spite of the transfer of a considerable amount of blood. The variations in the pulse-rate of either donor or patient are likewise too irregular and too subject to disturbance from psychic causes to be of help.

The rise in the percentage of hemoglobin, on the other hand, when the patient's hemoglobin is low at the start of the transfusion, is a phenomenon which occurs with great regularity and is susceptible of very accurate measurement. In fact, for three years before the method of calculation to be described was followed, we and others used the hemoglobin rise as a rough guide in the course of transfusion. The question, however, of how high the hemoglobin can be raised in a given case, cannot be answered, except by precise calculation.

The principle on which our method of calculation is based is a simple arithmetical calculation. If two fluids, having different percentages of any substance in solution are mixed in unequal volumes, the percentage strength of the resulting mixture is the sum of the products of volume multiplied by the percentage of each solution, divided by the volume of the total mixture. Thus, if one volume of a 50 per cent. solution is mixed with two volumes of a 100 per cent. solution, the percentage strength of the resulting solution will be:

$$\frac{(1\times 50)+(2\times 100)}{1+2}=83.3 \text{ per cent.}$$

In order to calculate the exact amount of blood, and not merely the relative volume transfused, it is necessary to know the blood volume of donor and patient. As blood volume, even in health, undergoes slight variation, and there is at present no practical method for accurate determination of blood volume, it is impossible at present to know the blood volume in each instance with great accuracy. Nevertheless, a large number of experimental observations by various authors have shown that blood volume bears a rather constant relation to body-weight. The conclusions of different authors on this subject do not all agree; but from a large number of accurate determinations by various methods it has recently become clear that the original estimate of Welcker in 1858, accepted for many years—that human blood-weight is approximately one-thirteenth of the body-weight — is wrong, and that the actual proportion of blood is much smaller and corresponds more nearly to one-nineteenth of the body-weight.[1]

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* From the Mount Sinai Hospital, New York; work done with the aid of the Eugene Meyer, Jr., Fellowship of the Mount Sinai Hospital.

On this basis, disregarding for the time being possible variations in the blood volume, the approximate weight of blood of the donor and of the patient is easily calculated. If, then, it is determined that it is safe to take from the donor any known proportion of his total blood-weight, we have all the data necessary to figure out to what percentage the hemoglobin of the patient will be raised by transfusing this predetermined weight of blood.

An example will make this clear: The donor weighs 190 pounds; the approximate weight of his total blood is therefore 10 pounds, and if it is determined that it is safe to take one-fourth of his blood, then 2½ pounds can be taken. His hemoglobin is 100 per cent. The patient weighs 114 pounds; his approximate blood-weight is therefore 6 pounds. His hemoglobin is 30 per cent. The result then of mixing 6 pounds of 30 per cent. blood with 2½ pounds of 100 per cent. blood is expressed by the following formula:

$$\frac{(6\times 30)+(2.5\times 100)}{6+2.5}=50.5 \text{ per cent.}$$

It may be seen that the result of transfusing 2½ pounds of blood, or a quarter of the donor's blood volume, will be to raise the patient's hemoglobin from 30 to 50 per cent.

Observations made during the course of the earliest transfusions at which we were present indicated that if more than one-quarter of the donor's blood was taken, symptoms of collapse, ordinarily of short duration, were apt to supervene. We have, therefore, usually reckoned on transfusing that amount, although as much as one-third can often be safely transfused.

The donor should be sharply watched as soon as the hemoglobin rise of the patient nears a point that indicates that one-quarter of his blood has been transfused. Larger amounts of blood can be removed, if, when near this point, the flow be made intermittent by interruptions of the flow for a few minutes at a time.

Scattered warnings in the literature as to the danger of acute dilatation of the patient's heart from excessive transfusion led us, at first, to make a similar calculation as to the amount of blood which a given patient could receive. Experience, however, in over one hundred transfusions has shown that this is necessary only when there is a disparity between the size of patient and donor, as in the transfusion of children or small adults. Usually the circulation adjusts itself rapidly and easily to the increase of blood volume, and it is practically impossible (except in the preceding instances) for a donor, without collapsing to give up enough blood to embarrass seriously the circulation of an adult recipient. In fact, in both donor and patient, circulatory embarrassment resulting from transfusion appears to depend on the speed with which the blood is transfused rather than the amount transfused; and by transfusing slowly it is generally possible to avoid any unfavorable symptoms on the part of either.

In over 130 transfusions,[2] during which we were able to control the amount to be transfused, we saw no instance of any circulatory embarrassment. But we know of a number of other instances in which this did occur. We have records of two of these. The one was a case of subacute bacterial endocarditis resulting in death a few hours after the transfusion and showing, post mortem, numerous infarctions in the heart-muscle. The other was a case in which an unjustifiably large transfusion was followed by edema of the lungs and hematuria lasting two days. This was the type of case in which trouble could have been easily avoided if a calculation had been made, as there was great discrepancy in the sizes of donor and patient. The donor weighed 190 pounds and had 95 per cent. of hemoglobin. The patient weighed 97 pounds and her hemoglobin was 15 per cent. Calculation shows that if 2½ pounds of blood (equivalent to one-quarter of the donor's or one-half of the patient's blood volume) had been transfused the hemoglobin would have been raised to 31 per cent. Instead it was raised in twenty minutes to 52 per cent. (indicating that over 4 pounds of blood had been transfused[1]).

In cases in which cardiac insufficiency with edema is present (particularly as seen in severe grades of pernicious anemia) we are in the habit of putting the patient on the *Karell diet for two days (no other food than* 900 c.c. of milk a day and no water). The diuresis obtained gives room in the circulation for the blood to be later added by transfusion.

There are several possible sources of error in this calculation, due to variations in the blood volume. The first of these, of course, is due to loss of blood in acute hemorrhage. When the hemorrhage has occurred within a few hours of the transfusion, if it is possible to form some idea of the amount of blood lost, an allowance can easily be made for this. When the hemorrhage has occurred more than from twelve to twenty-four hours before the transfusion, it is probably unnecessary to make any allowance, because, after hemorrhage, the circulating blood very rapidly takes up plasma from the tissues, and this probably brings the blood volume to somewhere near normal. Variations in the blood volume undoubtedly occur in chronic anemias and other diseases, but our knowledge of them at present is too scanty to allow us to take them into calculation. Probably they are not great enough to affect the result seriously.

Another source of error which enters into practically every case, and for which it is impossible to make allowance, is the absorption of plasma from the circulation by the tissues. This is seen, for instance, in the almost continued rise of hemoglobin for some hours after transfusion. In practically every one of the forty cases in which the hemoglobin was estimated again within from

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1. Behring: Beitr. z. exper. Therap., 1899, i, 1054. Haldane and Smith: Jour. Physiol., 1900, xxv, 331. Plesch: Ztschr. f. exper. Pathol. u. Therap., 1909, vi, 380. Smith: Trans. Path. Soc., London, 1900, li, 311. Oerum: Deutsch. Arch. f. klin. Med., 1908, xciii, 356.

2. Performed by the various surgeons on the staff of the Mount Sinai Hospital.

a few hours to twenty-four hours after the transfusion, the hemoglobin percentage was found to have risen from 3 to 10 per cent. above the height reached at the end of the transfusion (exclusive, of course, of those cases in which hemorrhage continued). In all of the cases in which hemoglobin estimations were made within one or two hours of the end of the transfusion, it was found that most of the subsequent rise had already taken place. It appears, therefore, that concentration of the blood by removal of plasma goes on very rapidly, and it is obvious that some of it must go on even during the transfusion.

If we make any allowance for this, it will be to raise slightly the level to which it is safe to carry the hemoglobin, as, on account of the process of blood concentration, the apparent amount calculated from the hemoglobin rise will be slightly larger than the real amount already transfused at any given moment. Our experiences, however, in which accurate weighings of donor or patient were used to control the calculation, showed that, while these sources of error may exist, in most cases they are not large enough to affect materially the result of the calculation.

We have observations on the hemoglobin rise in ninety-nine transfusions. In thirty-two of these, calculations were made on the assumption that it was safe to transfuse one-quarter of the donor's blood volume; and these calculations were used as a guide in the transfusion. In the great majority of cases, the hemoglobin was raised to approximate the calculated amount. In only one of these cases in which the calculated amount was not exceeded was there any collapse of the donor. In nine cases the calculated hemoglobin limit was exceeded by less than 5 per cent., and in two cases it was exceeded by respectively 9 and 10 per cent. without any serious symptoms on the part of donor or patient.

It is possible, of course, not merely to calculate the hemoglobin rise to be anticipated from transfusing a given volume of blood, but also to estimate, from an observed hemoglobin rise, the volume of blood which must have been transfused. This is done by simple algebraic calculation, substituting the unknown factor, X, for the volume of blood transfused, in the preceding formula. Thus, the illustration previously given may be taken. Suppose the donor weighs 190 pounds and has a hemoglobin of 100 per cent. The patient weighs 114 pounds and has a hemoglobin of 30 per cent. The observed rise in hemoglobin is to 50.5 per cent. Then, substituting X for the unknown amount of blood transfused, we have the equation:

$$\frac{6\times 30+(X\times 100)}{6+X}=50.5$$

Simplifying which, we get: $X = 2.5$ pounds of blood transfused.

In order to test the accuracy of the method of calculation, we have by means of this formula calculated back from the observed rise in hemoglobin to the amount of blood transfused in eleven cases in which the amount of blood transfused was determined by accurate weighings of either donor or patient immediately before and after transfusion. The correspondence between the calculated and actually transfused amount has been surprisingly close, as the accompanying table shows.

In the weighings, of course, allowance was made for the fluids taken by donor and patient, as the case may have been, the fluids being carefully measured in each instance. It is noticed that, except in three instances, the agreement between the calculated amount and the observed amount of blood transfused was so close as to leave no doubt of the value of the calculation. In these three instances special disturbing factors entered. Thus, in Case 7, in which the donor lost a great deal more weight than he was calculated to have lost by transfusion of blood, the additional loss probably is partly accounted for by a severe collapse, during which exceedingly profuse sweating occurred. In Case 37, there was only a very small amount of blood transfused in proportion to the size of the patient; and here again the difference is probably accounted for by the loss of weight by sweating during the unusually long time (two and one-half hours) that the donor was on the operating-table. The discrepancy of almost a pound, in Case 45, is hard to account for, but was probably due to sweating.

It is noticed that in all of the cases in which there was a discrepancy between the calculated and the observed blood transfer, it was the donor who was weighed and the discrepancy was always in the same direction, namely, the donor apparently lost more weight than he should have, by calculation. In the three instances (Cases 16, 31 and 49) in which it was possible to weigh the patients, the agreement between the calculated and the weighed amounts of blood was strikingly close. In most of the cases, however, the patient was far too ill to be put on the scales before transfusion, and the patients' weights which are used as a basis of calculation are generally approximations arrived at from the weight which the patients were known to have had before illness. This, of course, constitutes also a slight source of inaccuracy in calculation.

BLOOD TRANSFUSION IN ELEVEN CASES

Case No. (New Series)	Patient Wgt. Lbs.	Patient Hb. %	Donor Wgt. Lbs.	Donor Hb. %	Per Ct. of Hb. Rise Observed	By Calcul. of Bl. Transf., Lbs.	By Wgt. of Bl. Transf., Lbs.	Determinations and Remarks*
5	160	30	190	90	44	2.5	2.7	Donor's loss.
7	160	45	144.50	90	58	3.4	5	Donor's loss; severe collapse; profuse sweating.
10	120	23	161.25	76	42	3.5	3.3	Donor's loss.
16	22.56	33	120	76	50	0.71	0.6	Patient's gain.
18	130	53	211.87	80	60	2.7	3	Donor's loss.
31	44.81	21	178.37	85	39	0.9	1.06	Patient's gain.
37	119	13	162.81	87	23	0.84	1.62	Donor's loss; slow transfusion; flow lasting 1 hr. 27 min.; donor on table 2½ hrs.
39	120	55	151.50	82	60	1.4	1.3	Donor's loss.
43	120	36	169	84	53	3.4	3.4	Donor's loss.
49	95	31	158.25	86	52	3	3	Donor's loss and patient's gain.†

* The calculations are based on the donor's loss or the patient's gain, as indicated respectively.

† The patient gained 2 pounds, 12 ounces. The donor lost 3 pounds, 4 ounces. The discrepancy is explained on the assumption that each of them lost 4 ounces by sweating.

A recent indirect transfusion by the syringe method in which, of course, the exact amount of blood transfused was precisely known, has also given us the opportunity to confirm the correctness of the calculation. In this case 900 c.c. (approximately 1.8 pounds) of blood were transfused. The patient's weight was between 150 and 160 pounds. His hemoglobin was 38 per cent. The hemoglobin of the transfused blood was 90 per cent. According to calculation, the patient's hemoglobin should have been raised to 47.3 per cent. by the transfusion of the 900 c.c. It was actually raised to 48 per cent. The calculation used was the following:

$$\frac{(8\times 38)+(1.8\times 90)}{9.8}=47.3 \text{ per cent.}$$

Close examination of the figures in the table reveals the fact that in a number of cases the amount of blood transfused was very large in proportion, either to the blood volume of the donor or of the patient. Thus, in Case 10, the donor, weighing 161 pounds, had approximately 8.4 pounds of blood; the 3.3 pounds which he lost was 40 per cent. of his blood-weight. He fainted on attempting to stand ten minutes after the transfusion, but was restored without stimulation, and had no further trouble.

In Case 43, the donor weighed 169 pounds, and had 8.8 pounds of blood, so that the 3.4 pounds of blood which he lost represented 39 per cent. of his total blood volume. He rose and walked away from the operating-table and had no symptoms of blood-loss whatever.

With regard to the amount that can be received by the patient, Case 31 is interesting. The child weighed 44 pounds. Its presumptive blood-weight was 2.3 pounds, and the amount transfused, therefore, was almost one-half as much as the child's own blood volume. The vessels were not depleted before transfusion, as this was not a patient who had been suffering from acute hemorrhage.

We have a number of other observations in which no weighings were made, but in which calculation from the hemoglobin rise showed that the amount of blood transfused must have been very large in proportion to the patient's own blood volume. Thus, in Case 4, Old Series, the hemoglobin was raised from 30 to 90 per cent., and two days later was 110 per cent. This was in a new-born infant suffering from melena neonatorum.

In Case 12, Old Series, a child of 4, suffering from hemophilia, the hemoglobin was raised from 11 to 70 per cent., and two hours after the transfusion it was 90 per cent. In this case the child was stuporous and had dilated pupils for two days after the transfusion, but recovered completely.

In Case 13, Old Series, also that of a child, which had a chronic anemia from osteomyelitis, the hemoglobin was raised from 24 to 75 per cent. in twelve minutes, with subsequent complete recovery. In adults there were never any such striking rises, simply because it would have taken the blood of several donors to produce such marked increase in the hemoglobin. It would seem, however, on general principles that certainly in persons past middle life, or with any tendency to arteriosclerosis, one should be cautious about transfusing more than perhaps one-quarter as much as the patient's own blood volume.

The method of calculation which we offer is applicable in nearly all cases which need transfusion. There is only one class of cases in which it cannot be applied, namely, cases which are not anemic, that is to say, cases in which the patient's hemoglobin percentage is approximately the same as that of the donor. Practically the only cases of this kind that come to transfusion are cases of acute hemorrhage in previously healthy persons. In these cases, of course, there is no hemoglobin rise at the time of transfusion. In over one hundred cases in which we have observed the hemoglobin closely, there were only four cases of this kind.

SUMMARY

1. It is as necessary to control the amount of blood transferred during a direct transfusion as it is to control the dosage in any other therapeutic procedure.

2. A simple arithmetical formula is given by which it is possible to calculate how much rise in the percentage of hemoglobin will be obtained by transfusion of a given volume of blood. The formula is:

$$\frac{\text{(Patient's blood weight} \times \text{patient's hemoglobin per cent.)} + \text{(weight of blood transfused} \times \text{donor's hemoglobin per cent.)}}{\text{Patient's blood weight} + \text{weight transfused (in pounds)}} = \text{Hemoglobin per cent. reached.}$$

The patient's blood-weight is estimated as one-nineteenth of the body-weight.

3. The amount to be transfused may be decided arbitrarily, with regard to the patient's need, or with regard to the donor's ability to give up blood.

4. It is always safe to take one-fourth of the donor's blood; it is often safe to take as much as one-third of the donor's blood volume, provided the transfusion is not done too rapidly.

5. Though the danger of overloading the circulatory system of the patient is not as great as has been thought, yet probably it is not wise to add more than one-fourth, or at most one-third, as much blood as a person of the patient's weight normally has. This needs to be taken into account only in children or very small adults, transfused from large donors, because in most cases a single donor will collapse before he can give enough blood to embarrass the circulation of a full-grown adult patient. If more than one donor is used this part of the calculation becomes of great importance.

6. By means of exact weighings of either donor or patient or both, before and after transfusion, in a series of eleven cases, we have shown that the formula which we give corresponds quite closely to the actual amount of blood transfused.

7. By using this calculation as a guide and determining before each transfusion the point to which the hemoglobin ought to be raised, it is possible to avoid untoward symptoms in either donor or patient. We have demonstrated this in a large number of transfusions.

8. The method is of value, not only for determining the amount of blood being transferred during direct (vessel to vessel) transfusions, but also for determining beforehand how much blood ought to be transferred during indirect transfusions (whether by syringe or some other method).

We wish to express our obligations to the surgeons on the staff of Mt. Sinai Hospital for the privilege of making these studies.

THE UNDERLYING FACTORS IN THE SPREAD OF TUBERCULOSIS *

ALBERT PHILIP FRANCINE, A.M., M.D.
PHILADELPHIA

There are two broad phases in the communicability and spread of tuberculosis, which in orderly procedure are best discussed separately, (*a*) the social and economic side of the problem, and (*b*) the more strictly medical side.

THE SOCIAL AND ECONOMIC SIDE

In placing the responsibility for the spread of infection we must in the last analysis begin with the individual, rather than the institution. It is, theoretically, more the fault of the people than the fault of their surroundings. It is the fault of the people who make a few hours to twenty-four hours after the transfusion, the hemoglobin percentage was found to have risen from 3 to 10 per cent. above the height reached at the end of the transfusion (exclusive, of course, of those cases in which hemorrhage continued). In all of the cases in which hemoglobin estimations were made within one or two hours of the end of the transfusion, it was found that most of the subsequent rise had already taken place. It appears, therefore, that concentration of the blood by removal of plasma goes on very rapidly, and it is obvious that some of it must go on even during the transfusion.

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* Read before the College of Physicians, Philadelphia, March 4, 1914.

If we make any allowance for this, it will be to raise slightly the level to which it is safe to carry the hemoglobin, as, on account of the process of blood concentration, the apparent amount calculated from the hemoglobin rise will be slightly larger than the real amount already transfused at any given moment. Our experiences, however, in which accurate weighings of donor or patient were used to control the calculation, showed that, while these sources of error may exist, in most cases they are not large enough to affect materially the result of the calculation.

We have observations on the hemoglobin rise in ninety-nine transfusions. In thirty-two of these, calculations were made on the assumption that it was safe to transfuse one-quarter of the donor's blood volume; and these calculations were used as a guide in the transfusion. In the great majority of cases, the hemoglobin was raised to approximate the calculated amount. In only one of these cases in which the calculated amount was not exceeded was there any collapse of the donor. In nine cases the calculated hemoglobin limit was exceeded by less than 5 per cent., and in two cases it was exceeded by respectively 9 and 10 per cent. without any serious symptoms on the part of donor or patient.

It is possible, of course, not merely to calculate the hemoglobin rise to be anticipated from transfusing a given volume of blood, but also to estimate, from an observed hemoglobin rise, the volume of blood which must have been transfused. This is done by simple algebraic calculation, substituting the unknown factor, X, for the volume of blood transfused, in the preceding formula. Thus, the illustration previously given may be taken. Suppose the donor weighs 190 pounds and has a hemoglobin of 100 per cent. The patient weighs 114 pounds and has a hemoglobin of 30 per cent. The observed rise in hemoglobin is to 50.5 per cent. Then, substituting X for the unknown amount of blood transfused, we have the equation:

$$\frac{6\times30+(X\times100)}{6+X}=50.5$$

Simplifying which, we get: $X = 2.5$ pounds of blood transfused.

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It is noticed that in all of the cases in which there was a discrepancy between the calculated and the observed blood transfer, it was the donor who was weighed and the discrepancy was always in the same direction, namely, the donor apparently lost more weight than he should have, by calculation. In the three instances (Cases 16, 31 and 49) in which it was possible to weigh the patients, the agreement between the calculated and the weighed amounts of blood was strikingly close. In most of the cases, however, the patient was far too ill to be put on the scales before transfusion, and the patients' weights which are used as a basis of calculation are generally approximations arrived at from the weight which the patients were known to have had before illness. This, of course, constitutes also a slight source of inaccuracy in calculation.

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18	130	53	211.87	80	60	2.7	3	Donor's loss.
31	44.81	21	178.37	85	39	0.9	1.06	Patient's gain.
37	119	13	162.81	87	23	0.84	1.62	Donor's loss; slow transfusion; flow lasting 1 hr. 27 min.; donor on table 2¼ hrs.
39	120	55	151.50	82	60	1.4	1.3	Donor's loss.
43	120	36	169	84	53	3.4	3.4	Donor's loss.
49	95	31	158.25	86	52	3	3	Donor's loss and patient's gain.†

* The calculations are based on the donor's loss or the patient's gain, as indicated respectively.

† The patient gained 2 pounds, 12 ounces. The donor lost 3 pounds, 4 ounces. The discrepancy is explained on the assumption that each of them lost 4 ounces by sweating.

A recent indirect transfusion by the syringe method in which, of course, the exact amount of blood transfused was precisely known, has also given us the opportunity to confirm the correctness of the calculation. In this case 900 c.c. (approximately 1.8 pounds) of blood were transfused. The patient's weight was between 150 and 160 pounds. His hemoglobin was 38 per cent. The hemoglobin of the transfused blood was 90 per cent. According to calculation, the patient's hemoglobin should have been raised to 47.3 per cent. by the transfusion of the 900 c.c. It was actually raised to 48 per cent. The calculation used was the following:

$$\frac{(8\times38)+(1.8\times90)}{9.8}=47.3 \text{ per cent.}$$

Close examination of the figures in the table reveals the fact that in a number of cases the amount of blood transfused was very large in proportion, either to the blood volume of the donor or of the patient. Thus, in Case 10, the donor, weighing 161 pounds, had approximately 8.4 pounds of blood; the 3.3 pounds which he lost was 40 per cent. of his blood-weight. He fainted on attempting to stand ten minutes after the transfusion, but was restored without stimulation, and had no further trouble.

In Case 43, the donor weighed 169 pounds, and had 8.8 pounds of blood, so that the 3.4 pounds of blood which he lost represented 39 per cent. of his total blood volume. He rose and walked away from the operating-table and had no symptoms of blood-loss whatever.

With regard to the amount that can be received by the patient, Case 31 is interesting. The child weighed 44 pounds. Its presumptive blood-weight was 2.3 pounds, and the amount transfused, therefore, was almost one-half as much as the child's own blood volume. The vessels were not depleted before transfusion, as this was not a patient who had been suffering from acute hemorrhage.

We have a number of other observations in which no weighings were made, but in which calculation from the hemoglobin rise showed that the amount of blood transfused must have been very large in proportion to the patient's own blood volume. Thus, in Case 4, Old Series, the hemoglobin was raised from 30 to 90 per cent., and two days later was 110 per cent. This was in a new-born infant suffering from melena neonatorum. In Case 12, Old Series, a child of 4, suffering from hemophilia, the hemoglobin was raised from 11 to 70 per cent., and two hours after the transfusion it was 90 per cent. In this case the child was stuporous and had dilated pupils for two days after the transfusion, but recovered completely.

In Case 13, Old Series, also that of a child, which had a chronic anemia from osteomyelitis, the hemoglobin was raised from 24 to 75 per cent. in twelve minutes, with subsequent complete recovery. In adults there were never any such striking rises, simply because it would have taken the blood of several donors to produce such marked increase in the hemoglobin. It would seem, however, on general principles that certainly in persons past middle life, or with any tendency to arteriosclerosis, one should be cautious about transfusing more than perhaps one-quarter as much as the patient's own blood volume.

The method of calculation which we offer is applicable in nearly all cases which need transfusion. There is only one class of cases in which it cannot be applied, namely, cases which are not anemic, that is to say, cases in which the patient's hemoglobin percentage is approximately the same as that of the donor. Practically the only cases of this kind that come to transfusion are cases of acute hemorrhage in previously healthy persons. In these cases, of course, there is no hemoglobin rise at the time of transfusion. In over one hundred cases in which we have observed the hemoglobin closely, there were only four cases of this kind.

SUMMARY

1. It is as necessary to control the amount of blood transferred during a direct transfusion as it is to control the dosage in any other therapeutic procedure.

2. A simple arithmetical formula is given by which it is possible to calculate how much rise in the percentage of hemoglobin will be obtained by transfusion of a given volume of blood. The formula is:

$$\frac{(\text{Patient's blood weight} \times \text{patient's hemoglobin per cent.}) + (\text{weight of blood transfused} \times \text{donor's hemoglobin per cent.})}{\text{Patient's blood weight} + \text{weight transfused (in pounds)}} = \text{Hemoglobin per cent. reached.}$$

The patient's blood-weight is estimated as one-nineteenth of the body-weight.

3. The amount to be transfused may be decided arbitrarily, with regard to the patient's need, or with regard to the donor's ability to give up blood.

4. It is always safe to take one-fourth of the donor's blood; it is often safe to take as much as one-third of the donor's blood volume, provided the transfusion is not done too rapidly.

5. Though the danger of overloading the circulatory system of the patient is not as great as has been thought, yet probably it is not wise to add more than one-fourth, or at most one-third, as much blood as a person of the patient's weight normally has. This needs to be taken into account only in children or very small adults, transfused from large donors, because in most cases a single donor will collapse before he can give enough blood to embarrass the circulation of a full-grown adult patient. If more than one donor is used this part of the calculation becomes of great importance.

6. By means of exact weighings of either donor or patient or both, before and after transfusion, in a series of eleven cases, we have shown that the formula which we give corresponds quite closely to the actual amount of blood transfused.

7. By using this calculation as a guide and determining before each transfusion the point to which the hemoglobin ought to be raised, it is possible to avoid untoward symptoms in either donor or patient. We have demonstrated this in a large number of transfusions.

8. The method is of value, not only for determining the amount of blood being transferred during direct (vessel to vessel) transfusions, but also for determining beforehand how much blood ought to be transferred during indirect transfusions (whether by syringe or some other method).

We wish to express our obligations to the surgeons on the staff of Mt. Sinai Hospital for the privilege of making these studies.

THE UNDERLYING FACTORS IN THE SPREAD OF TUBERCULOSIS *

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There are two broad phases in the communicability and spread of tuberculosis, which in orderly procedure are best discussed separately, (*a*) the social and economic side of the problem, and (*b*) the more strictly medical side.

THE SOCIAL AND ECONOMIC SIDE

In placing the responsibility for the spread of infection we must in the last analysis begin with the individual, rather than the institution. It is, theoretically, more the fault of the people than the fault of their surroundings. It is the fault of the people who make the homes. This great plague flourishes in the homes of the ignorant, amid poverty and squalor; but, as has been well said, it is not alone the buildings which make the slums, but the people who live in them. Of course, bad housing conditions play a profound rôle in the endemicity of tuberculosis, but even could we give every family an airy, clean house, so long as ignorance, carelessness, filth, dissipation and alcoholism existed, we would still have slums, infected houses and tuberculosis.

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* Read before the College of Physicians, Philadelphia, March 4, 1914.

It is perfectly apparent that better housing conditions would be an enormous stimulus to better living and better home management; and therefore, while the first remedial step is education and uplifting among the poor and ignorant themselves, the second, corollary need, which is of equally pressing importance, is the improvement of physical conditions of living — of housing conditions. Next in importance in this relation comes the subject of conditions of labor or occupation; for, aside from faulty ways of living and bad places to live in, there are the many vile conditions of labor, which reduce the health and weaken the resistance of the individual, making him susceptible to superinfection or a fresh infection, and rendering him and his descendants less and less likely and able to bring into the world and rear healthy, robust children.

In mentioning conditions of labor, however, as an important element in the prevalence of tuberculosis, we must think clearly and understand that the many existing bad conditions are largely predisposing factors only, and that their true significance relates to the demoralization of the health, morals and social status of the individual, and to home conditions from inadequate wages. Because the morbidity from tuberculosis is high among a certain class of wage-earners, we must not jump to the conclusion that that kind of work specifically "causes" tuberculosis. What it really does is to reduce the general health and resistance of the individual. If such workers have the seed of tuberculosis in their bodies, as is often the case, undue fatigue, confinement and low wages give rise to the physical conditions necessary for the flourishing of the seed. There is no specificity of labor as a "cause" for tuberculosis. It is an enormous factor, but never a cause (eliminating infected workshops). It comes the nearest to being a cause where certain forms of dust are constantly inhaled, which act (in one way at least) by reducing the tone and resistance of the lungs themselves, and so predispose to the pulmonary localization and activity of already existing infection, or a fresh infection.

For ethical and hygienic reasons the common drinking-cup must go, but tuberculosis is the least likely of the infections (so far as adults are concerned) to be engendered in this way. The question whether or not this should be made to include the common communion-cup may be answered perhaps in the affirmative on account of the danger of certain infections, but so far as the spread of tuberculosis is concerned, this is a negligible factor.

It is thus recognized that the problem of tuberculosis is in a large sense a social and economic one. With such factors to contend with, having their roots deep down in the very basis of modern life and conditions, affecting millions of people, is it not right that we should at least pause to appreciate the vastness of our undertaking, and from its very vastness should we not draw resolve not only to pursue our aim indomitably, but to be patient in demanding immediate results, though it should be stated, in passing, that results are becoming strikingly apparent.

Thus let us neither forget nor be dismayed by the fact that our problem is to combat, one might almost say, the drift of the times, to raise through education, sanitary laws, medical hygiene and philanthropic effort the proletariat from their condition of dense ignorance and poverty, to enable them to secure suitable homes and teach them how to live in and manage them, and to improve the conditions of their labor, that there may be cleanliness and light, suitable care of the children, sufficient food and clothing, necessary hours of rest, provident and good habits and self-restraint, and available medical supervision. But having said this much, we have not said all, for we must perform the same Augean task for the tens of thousands of immigrants arriving hourly from Europe to swell the ranks of this great army of ignorance and poverty.

But there is one great satisfaction to be taken in the very breadth and vastness of this phase of the problem, namely, that it is not merely tuberculosis work, but public health work in whatever form of activity this shows itself. Antituberculosis work and all forms of public health work in general bear an increasingly apparent interdependence. It is not alone strictly antituberculosis measures which may be confidently looked to for results, but all the associated movements for the public welfare in health, morals and conditions, which are essentially allies. This is now fully recognized, and with the well-organized tuberculosis crusade pointing the way, other movements have followed along similar lines and the crusade of enlightenment and prevention of disease is becoming more and more a unit in its methods, aims and interrelationships.

THE MEDICAL SIDE

It is necessary next to consider certain salient features of the disease itself bearing on the question of the spread of infection. Two great factors in its communicability stand out:

1. Infection takes place from close personal association or contact with open tuberculosis, as by living with a consumptive or from living in a room or house contaminated by a consumptive. The great source of the infection lies in the carelessness of the individual consumptive in contaminating his surroundings by spitting about or not properly disposing of his sputum, or by spray infection from coughing (equally dangerous) without guarding the mouth with a paper napkin. His towels, bedding, table utensils, etc., are also a source of infection. The period at which a consumptive is most dangerous covers, of course, the second and third stages of his disease when the lung is breaking down and the sputum contains large numbers of living tubercle bacilli.

2. The age at which infection is most likely to take place is childhood. It should be borne in mind that adults, particularly healthy adults, have a very considerable resistance or immunity to tuberculous infection. Without discussing the question of the source of this relative immunity, it may be stated as a fact that it requires a prolonged exposure and implantation to give rise to pulmonary tuberculosis in an ordinarily healthy man or woman. In proportion as bad surroundings, faulty personal hygiene, bad conditions of labor, other infections, dissipation, etc., play a part in the life of the individual, by just so much is this natural or acquired immunity impaired or even broken. But the fact

remains that the chance inhalation of tubercle bacilli, as they may float in the dust of the street, or in public meeting-places, or the occupancy for a night or two of an infected room or sleeping-berth, could hardly give rise to pulmonary tuberculosis in an adult.

This must not be misinterpreted as in any sense condoning infected dust or infected places. No inference can be drawn from this that spitting in public places, street-cars or on the sidewalks should be tolerated. On ethical grounds and because of the dangers of catarrhal infections, spitting should be (and is in many communities) a misdemeanor punishable by law. The danger of infection of children by such conditions is a very possible one; for the time at which this natural resistance is weakest is in childhood, and for this reason and because of intimate and prolonged contact with open tuberculosis in their homes, children furnish the great soil for implantation. For physiologic reasons which it would lead us too far afield to discuss, this infection during childhood does not as a rule develop into pulmonary tuberculosis at that time, but lies dormant in the lymphatic system or is latent until adult life, when it breaks forth or manifests itself in pulmonary localization. It is largely children infected by contact in their homes who furnish later the ever on-coming crop of consumptive.

Milk and meat from tuberculous animals also constitute a source of infection in childhood. Infection may also be hereditary, the direct transmission of the tubercle bacillus taking place from the mother to the fetus by placental circulation. This has been shown to occur in mothers with advanced pulmonary or miliary tuberculosis, but has recently been shown as also possible when the lesion in the mother is in the incipient stage or even latent or non-active at the time of the birth (Warthin).

During childhood and early adolescence this early tuberculous infection, glandular in type, may manifest itself not at all, or only in anemia, underdevelopment, general physical delicacy, etc. These children react to tuberculin and often have enlarged lymphatic glands, but there is no other way in the majority of instances of telling that they are tuberculous: but this is quite sufficient for the diagnosis, which is to be understood to mean that the moment a child reacts to tuberculin, it is conclusive evidence that it has been sensitized by the tubercle bacillus and that the moment a child is thus tuberculized, it becomes potentially at least a future case of pulmonary tuberculosis.

Not only does the general trend of expert opinion bear out this view in relation to time of infection, but there are also many clinical and pathologic statistical data to confirm it. The results of the tuberculin test — which, when properly performed and repeated, is recognized as being specific — in large groups of children in hospital practice, as reported by von Pirquet, Calmette, Hamburger, Frantz and others in widely different cities, warrants the statement that most children of the working class are sensitized by the time they reach 14 or 15 years of age. The same is true of post-mortem findings among the poorer classes. Evidence has been clearly accumulating as to the frequency with which the disease is found at necropsy; and with increased refinement in post-mortem work the percentages are increasing significantly. Nägeli reported definite signs of tuberculosis in 97 per cent. of all bodies examined consecutively. Hamburger in a large group of children reported post-mortem findings of 63 per cent. with tuberculous lesions between the ages of 7 and 10 years and 95 per cent. in those between 11 and 14 years of age. Ghon's post-mortem statistics from St. Elizabeth's Hospital in Vienna show that by the end of the third year from 6 to 8 per cent. are infected, the percentages rapidly rising until by the fourteenth year the infection reaches 92 per cent. It goes without saying that by no means all these patients would have developed pulmonary tuberculosis clinically had they lived; indeed, this early infection is looked on by many as a source of immunity to subsequent reinfection, but such statistics furnish valuable evidence of the time when primary infection takes place.

There arises here an interesting paradox, for while we know that infection with tubercle bacilli is so largely universal among the poorer classes in our cities, yet we also know that the death-rate from tuberculosis among urban populations has been steadily decreasing. To what is this due? Is it due to strictly antituberculosis measures in association with preventive and curative measures against disease in general? Is it due to institutional care and improved conditions of living? Or is it due to some deeper cause, a development of increased resistance, specific immunity or allergy (von Pirquet) in urban populations themselves? Recent discussion has concerned itself very much with this phenomenon, and authoritative opinions differ.

Thus Newsholme points out that, while the death-rate from tuberculosis is nearly always greater in urban than in rural districts, the countries showing the most urbanization have secured the greatest reduction in and the lowest death-rate from tuberculosis. The conclusion that he draws from this fact is that the death-rate from tuberculosis has declined to the greatest extent in those countries in which the ratio of institutional to domestic relief has been highest. A consideration of all the facts, he says, justifies the conclusion that the substitution of institutional for domestic relief for the consumptive poor has been historically the main factor in the reduction of this death-rate, and in a later paper he repeats that had it not been for the steadily increasing extent of institutional treatment of the sick, and especially of the consumptive sick, which has characterized most of our great centers of population, we should have experienced, not the decline of tuberculosis which has occurred, but a great increase in its prevalence. With this view I am in entire accord.

On the other hand, a no less distinguished investigator than Karl Pearson has suggested that the selective process of many years of heavy mortality from tuberculosis has left us with a more immune and resistant population. He would have us change our views as to the value of hospitals and sanatoriums in the prevention of tuberculosis, and devote all our efforts to raising the resistance of the individual and the race. In brief, he denies the value of our general campaign, says that we are all tuberculized, and that the only efficient source of prevention lies in developing this communal or race immunity, which is largely a matter of environment and heredity. T. D. Lister goes so far along these lines as to say that were it for a moment to be granted that it is possible to control the spread of tuberculosis by preventive measures, then the service rendered to urban populations would be dangerous instead of beneficial, because the development of what he considers the only important factor, namely, increased communal resistance, would be ignored; and he further adds that in his opinion the adult death-rate from tuberculosis may be taken as a measure of the loss of resistance to latent tuberculosis acquired in childhood.

A phase of this latter view is seen in much recent literature based on the studies of Roemer, Hamburger, von Pirquet, Baldwin and others, which has been recently emphasized by the last-named investigator, who believes that a primary infection in childhood is of value as a protection against subsequent reinfection by the production of a specific allergy or changed condition. As an illustration of this view may be cited his belief that the development of a strong allergy is at least one reason why miliary tuberculosis is not more frequent during relapses and extensions of pulmonary tuberculosis, particularly since we know that the bacilli themselves are often free in the blood-stream. Applying this, he feels that most adult tuberculosis is not due to a new infection or reinfection from contact, because the allergy of a childhood infection, so universally present, has protected against this, but that most adult tuberculosis is due to a lighting up of the disease from the spread of autogenous superinfection brought about by extraneous conditions of environment. Thus he argues that adults are very little endangered by close contact with open tuberculosis and not at all in ordinary association; childhood is the time of infection, youth the time of superinfection, and that from extension of the primary disease. With this view, except as it might imply a relaxation of any of our usual precautionary measures against the possibility of infection among adults by contact, I am largely in accord, as stated above. Such theories inevitably lead back to the fundamental principle of eugenics, which lie not strictly in the survival of the fittest, not strictly in an attempt to rear a race of men and women whose resistance is attuned to living and surviving in a germ-laden world and who are capable of withstanding an utterly vile and vicious environment, but rather in forming a pure, healthy and happy environment, in making the world a fit place for all to live in, and then in producing the best and ablest race both physically and mentally to inhabit that purified environment (Moore).

Certain phases of the views quoted above appear radical and perhaps unwise general teaching (see Pearson), but whatever the element of error or of truth—and the truth probably involves a middle course—these views have at least served the purpose of calling the attention of those interested in the crusade to this very important element of racial and communal resistance, whether natural or acquired by early infection, which we have perhaps been inclined to overlook and neglect, and point to the practical necessity for directing every effort by good food, rest and recreation, by airy schools, playgrounds, inspection and supervision, to raising this quality of resistance, particularly in childhood and early adult life.

It may be stated as a fact that tuberculosis is the most common infection of childhood, and as well pointed out by Philip, we must get rid of the artificial distinction between so-called medical and surgical tuberculosis. From the scientific point of view, the most slender seedling of tuberculosis is potentially significant. It is impossible to say which tuberculous seed will be cast off and which will mature. Inoculation may occur through the mucous membrane of the gastro-intestinal or respiratory tract, or the skin, and whether or not it will spread from the lymphatic system, which is the first site of this early infection, and develop into pulmonary tuberculosis later depends largely on the child's vitality and resisting powers through its living tissue cells. In other words, this quality of natural or acquired immunity may hold the infection dormant; may heal an active lesion in its incipiency or localize it in the glands or bones; or may give way with resulting meningeal, miliary or pulmonary involvement. The course of events which supervenes is dependent largely on extraneous circumstances, on the amount and character of the tuberculous infection, on the number and character of the acute infections to which the person is exposed; on his enforced environment and to a considerable extent on inherited qualities. Philip says:

> The problem can only be solved effectively by a better understanding of the physiologic needs of developing life and a corresponding renovation of the nurseries and schoolrooms of the nation. It is folly to dream of transferring all tuberculous children to preventoria or sanatoria. This plan is to plead ignorance of the essential needs of the problem. The home of the poor man must be made the nursery of healthy children and cease to be the breeding-ground of tubercle-tainted wastrels. Each recreated home is an effective preventorium against tuberculosis.

It will thus be seen that the problem of prevention, to be effective, even as limited to the medical aspect of the communicability of tuberculosis, must take into account not only the care and isolation of the consumptive himself, but also the care and development of the children who have already been infected or who may be exposed to infection, and probably the development of a specific racial immunity.

But when we view as essentially one, as we must do, the two broad phases of the problem which I have attempted to outline, namely the social and economic conditions, and the more strictly medical conditions responsible for the prevalence and spread of tuberculosis, the point previously emphasized is brought forcibly on us—how very apparent is the interdependence to-day of the tuberculosis campaign and all efforts looking to the common welfare! Let me repeat that it is not alone by the strictly antituberculosis campaign that we may confidently expect to control tuberculosis, but by all allied movements looking to improvement of the health, morals, or condition of the people. Folks says:

> If our task is the more difficult because it is bound up with every phase of modern civilization, it is equally true that every substantial advance in other lines assists our cause.

For instance, it has been pretty conclusively shown (Reinicke) that wherever the death-rate from typhoid fever is reduced, through the introduction of pure water, numerically by one, there is a simultaneous reduction in the general death-rate of from two to three. What is true in this case is equally or even more strikingly so in relation to other infections. Think of the vista of accomplishment which opens up before us, when we know, as we do know, that more than 80 per cent. of all deaths are due to preventable causes!

Thus it is apparent that the movements against infant mortality, venereal diseases, alcoholism, the infectious fevers, cancer, procreation of mental defectives, and the correlated campaigns for better housing conditions, better hours and conditions of labor, child-welfare work, etc., all these movements, public or private, of whatever scope and by whatever methods they proceed, are all working to a common end, the welfare of the race, and as such are prototypes and allies of each other and of the greatest of them all, the tuberculosis campaign. They are all campaigns of preventive medicine, based on scientific development and attempting largely by education to carry the message of health and right living into the homes and very hearts of all the people.

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BINASAL HEMIANOPSIA OCCURRING IN THE COURSE OF TABETIC OPTIC ATROPHY

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That binasal hemianopsia is a rare symptom (we believe that it should be considered as a symptom and not as an entity), may be inferred from the small number of instances recorded.

The impossibility of a single lesion producing binasal hemianopsia is generally accepted. Gowers[1] writes of binasal hemianopsia as being the rarest of all symptoms of disease of the chiasm, and further states that it can result only from a lesion which involves each side of the chiasm and spares the central portion. He adds that an irregular nasal hemianopsia may appear as the result of a tabetic optic atrophy and states that the only case he had observed was of this variety. Oppenheim[2] asserts that nasal hemianopsia resulting from a lesion limited to the external fibers of the chiasm is a very rare occurrence, but does not deny its possibility. Purves Stuart[3] holds the view that nasal hemianopsia may result from lesions at the lateral extremity of the chiasm interrupting the course of the non-decussating fibers. We, however, are in accord with those who believe that nasal hemianopsia cannot result from such a lesion, which view is admirably defended by William T. Shoemaker,[4] who refers to the investigations of Henschen, Dimmer, Hosch, von Monakow and others as proving that the uncrossed fibers are at no point in the chiasm found as an isolated bundle.

Herschel[5] and Coppez[6] have reported cases of binasal hemianopsia which they believe were of central origin. Herschel's supposition was that his patient had two symmetrical hemorrhages in the occipital lobes, while Coppez considered his case due to thrombi in both occipital lobes following cardiorenal disease.

Daae[7] has reported a case of probable centric origin. The reviews of his paper would seem to indicate that the condition was probably an abiotrophy, as five other members of the same family are reported as being similarly affected.

That in the majority of instances the symptom results from more or less symmetrical lesions of the optic nerves is shown by an analysis of the cases recorded. Shoemaker in 1905 collected eighteen cases of binasal hemianopsia to which he added one of his own. Since that date, we have found but one case reported, that of Coppez, which, with our case, would make twenty-one. Of this series, in three cases neuroretinitis was present, in two traumatic optic atrophy, two were optic neuritis associated with brain tumor, two were tabetic optic atrophy, two chronic interstitial optic neuritis, two secondary optic atrophy, one primary optic atrophy, and one traumatic optic neuritis. Thus in fifteen out of twenty-one cases, or 71 per cent., the symptom could be traced to optic nerve disease.

At first glance it appears strange that in only one instance, the case of Mooren, has nasal hemianopsia been reported as occurring in hysteria. Gowers considers it remarkable that hemianopsia of any variety so seldom appears as part of the manifestations of hysteria, but we believe that this fact is due to lack of suggestion. If hemianopsia were a common symptom of other conditions and thus brought to the attention of our hysteric patients, we believe that it would occur more frequently in this class, just as the clinic of Charcot developed the extraordinary types of major hysteric convulsions so rarely seen at present, at least in this country.

Another fact of interest is the absence of binasal hemianopsia in insular sclerosis when there are symmetrical lesions of the outer halves of the chiasm. A sclerotic area in the center of the chiasm is a comparatively frequent occurrence in this disease, yet bitemporal hemianopsia does not as a rule follow. We believe that this is due to the tendency of the disease to spare the axis cylinders while destroying the rest of the nerve.

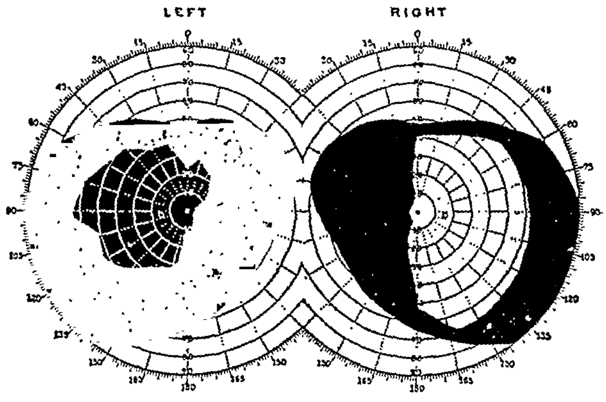

Chart 1.—Form field, 10 mm. object, April 4, 1912.

Rakowicz[8] of Dresden in 1895 reported a case which in many respects is similar to the case we report. The patient, a woman, aged 50, complained of failing vision. Examination disclosed a suspicious pallor of both optic nerves and typical nasal field defects. At the end of five and a half months vision was reduced to nil in right eye; in left eye, fingers when held closely. He reviewed the subject in a thorough manner and concluded that binasal hemianopsia could not result from a lesion of any part of the chiasm and believed that it was simply a condition or symptom of grave prognostic value occurring rarely in optic atrophy.[9]

A report of our case follows:

History.—O. N., man aged 48, German, unmarried, stocking-weaver, applied to the Wills Hospital, Dr. Sweet's service, April 3, 1912, complaining of failing vision progressing slowly for the past three months, so that now he cannot see to do his work. There was no history of previous ocular disease,

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[1] Gowers: Diseases of the Nervous System.

[2] Oppenheim: Text-Book of Nervous Diseases, translated by Alexander Bruce.

[3] Stuart, Purves: The Diagnosis of Nervous Diseases.

[4] Shoemaker, William T.: New York Med. Jour., February, 1905.

[5] Herschel: Deutsch. med. Wchnschr., 1883.

[6] Coppez: Jour. méd. de Bruxelles, November, 1911.

[7] Daae: Norsk. Mag. f. Laegevidensk., 1869, xxii.

[8] Rakowicz: Klin. Monatsbl. f. Augenh., 1895.

[9] Other cases consulted:
Veasey: Ophth. Rec., 1897, vi.
Mooren: Ophthalmometrische Beobachtungen, 1867.
Burnett: Arch. Ophth., 1900, xxiv.
Lang and Beevor: Tr. Ophth. Soc. of the United Kingdom, 1894.

The child was put to the breast twelve hours after the operation. She remained in the hospital for twelve days.

Pathologic Report.—Examination of a specimen of the tube and ovary revealed that the tube was edematous and showed necrotic areas. The blood-vessels were thrombosed and there was extravasated blood in the lumen. The ovary was gangrenous.

The excellent prognosis in these cases stands out in contradistinction to strangulations in which the intestines are involved.

4238 Indiana Avenue.—4254 Indiana Avenue.

GONORRHEAL INVOLVEMENT OF THE SKIN OF THE PREPUCE CURED BY UNUSUAL THERAPEUSIS *

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As most authorities assert such an involvement rarely if ever occurs, I report this case of a low-grade inflammation of the skin of the prepuce, due to gonorrhea.

History.—Wm. S., aged 20, contracted gonorrhea three years ago. Three weeks after the first attack he noticed an area of redness on the under surface of the prepuce and that on pressure pus exuded from several points. Numerous antiseptic solutions were used to heal this lesion with negative result. Escharotics were tried without success. After several unsuccessful attempts to induce the inflammatory process to heal by other means, the surgeon in charge laid it open by a longitudinal incision through its entire length. Two months after operation the affected area was slightly improved; that is, it was still red and inflamed but there was no oozing of pus and only an occasional watery (serous) discharge, which continued until about one month before he came under my observation, when it had again become purulent. The patient says that "on pressure drops of pus can be expressed from several points in the inflamed area."

Physical Examination.—In April, 1913, examination of the patient showed a long prepuce on the anterior surface of which, one-half inch from the tip, extending in the long axis of the penis, was a linear lesion about 1 inch in length, and a quarter of an inch in width, somewhat raised above the level of the surrounding skin, reddish and which felt like a cord or a thread under the skin. Yellowish-white pus could be expressed from three distinct points, one of which was at the tip near the distal end of the penis, the second in the middle of the lesion, and the third at the proximal end. When probed the points were found to be superficial.

The pus was examined microscopically by Dr. R. M. Taylor of the pathologic department of the Post Graduate Medical School (N. Y.). He reported it as composed of polynuclear leukocytes, a considerable number of which contained Gram-negative cocci, typical of the gonococci in their morphologic characteristics and arrangement within the cell.

Culture Growths.—Plates on rabbit-blood agar and ascitic-fluid agar, showed, after twenty-four-hour incubation, numerous small grayish-white colonies which on microscopic examination proved to be Gram-negative cocci. Transfers from these colonies on ascitic agar grew with the characteristic appearance of the gonococcus. Therefore microscopically and culturally the organism was assumed to be a gonococcus.

Complement-Fixation Test.—The organism was subsequently identified as the gonococcus by the complement-fixation test.

Treatment and Course.—After the receipt of the pathologic report, I used a strong antiseptic wash of full strength hydrogen peroxid locally and later mercuric chlorid solution 1:1,000 for several weeks, but the lesion failed to heal. I then decided to circumcise, but on careful examination of the lesion I found that it extended backward beyond the corona and was therefore afraid that so much of the prepuce would have to be removed that later a curvature of the penis might occur during erection. I therefore decided on a more conservative plastic operation.

Operation and Result.—April 25, 1913, I excised an oval piece of the skin of the prepuce about 1 inch long extending from one-third of an inch from the tip of the prepuce to one-third of an inch back of the corona. The edges of the wound were brought together by four silkworm sutures. The wound healed by primary union in one week. When the patient was seen for the last time Sept. 7, 1913, no vestige of the lesion could be seen.

Pathologic Examination.—The excised tissue was examined by Dr. R. M. Taylor, who made the following report:

The specimen is an oval-shaped elongated piece of skin slightly flattened on one side. About 4 mm. from one end is seen an opening through the skin surface which leads into a sinus that can be followed through the middle of the tissue and ends blindly. The microscopic picture shows a sinus surrounded immediately beneath its epithelial layer by a mild acute exudative inflammation extending deeply into the subepithelial tissue where it is limited by a band of productive inflammation, as shown by the presence of young granulation tissue. Careful search for organisms (gonococci) by means of special strains was negative in result. This case is reported because of the rarity of occurrence of cutaneous gonorrhea and the unusual therapeutic procedure.

1097 Forest Avenue.

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* Reported at the Bronx Medical Society, September, 1913, at the Lebanon Alumni Society, May, 1913.

IDIOSYNCRASY TO ASPIRIN (ACETYLSALICYLIC ACID)

EDWARD N. REED, M.D., CLIFTON, ARIZ.

The patient, Mr. T. W. T., American, aged 36, clerk in a store, had the diseases of childhood and had typhoid at the age of 19; otherwise he has never had any serious sickness.

January 29, at 7 p. m., he took one capsule containing 5 grains of aspirin, for a "cold." In about half an hour after taking the capsule he vomited, and in another fifteen minutes, he says, "his throat felt stiff and dragged when he swallowed, and he thought he was developing tonsillitis." In an hour and a half after taking the capsule he had reached the serious condition in which I found him at 9:30, two and a half hours after taking the medicine. At that time the face was cyanotic, the lips and ears violaceous in color, the eyelids so edematous as to be swollen almost shut, and conjunctivae much injected. The whole face was swollen. The breathing was extremely labored, like asthmatic breathing. The nasal mucous membrane was so engorged that breathing through the nose was impossible. The patient had vomited several times. Inspections of the mouth showed the buccal mucus membrane, fauces and pharynx dark red and swollen. The uvula was swollen to twice its normal size. The rest of the body was normal in appearance.

The pulse was 120, soft and full, the temperature 98. Auscultation of the heart was negative. In the lungs were numerous dry whistling râles, but no moist ones. The breathing was such as one would expect with an edema of the glottis. The urine was negative.

No treatment was instituted. In about six hours the patient was comfortable, the nose patulous and the breathing normal. The following morning there was a fine discrete papular rash on the trunk.

The patient reports that he had a "cold" about a year ago, for which he took one capsule, given him by a druggist (which I have ascertained to have contained aspirin and acetphenetidin; of each 2½ grains), and that a condition similar to the one here reported resulted, lasting about five hours.

Meaning of Public Health.—An individual cannot live economically, socially, mentally or morally unless he has health. Neither can a nation. Until people can be made to see this viewpoint, public health will mean nothing more than a placard and a bottle of formaldehyd.—William DeKleine in *Public Health* (Mich.).

and the family history was unimportant. The patient's general health was good. He had had a suspicious luetic lesion twenty-four years ago.

Visual Examination.—Visual acuity: O.D., 4/60; O.S., 6/60. Lids, lacrimal apparatus, conjunctiva and cornea appeared healthy. Rotations of the muscles were good; there was no history of diplopia, and none was elicited with the colored glass. Pupils: right, 4.5 mm.; left, 4 mm.; no reaction to *light, direct or consensual. Pupillary (Wernicke's) inaction* test absent. Both eyes showed a sluggish reaction to accommodation. Fundus: right media was clear; disk pale, reniform, axis at 90, lamina not visible and cupping shallow, excessive heaping of pigment along nasal border and moderate pigmentation at the lower temporal side; the general outline was well defined; the retinal vessels presented a healthy, normal appearance. Left eye a general haze of lens, vitreous clear; disk slightly oval at 90, outline well defined with a moderate pigment border, color pale, lamina not visible, cupping shallow. Vessels appeared healthy. The general fundus picture of each eye, with the exception of the atrophic color of the disk, was normal.

Visual Fields: The first field was mapped April 4 and repeated testing disclosed a well-defined nasal defect. At the end of the second week the patient was accepted as a house case of another institution and remained there for nine weeks. He returned to our observation June 27, with a vision equal to hand movements in the right eye, left eye 2/60. Candle fields at this time showed a clear-cut binasal defect. Both optic papillae presented a decided atrophic pallor.

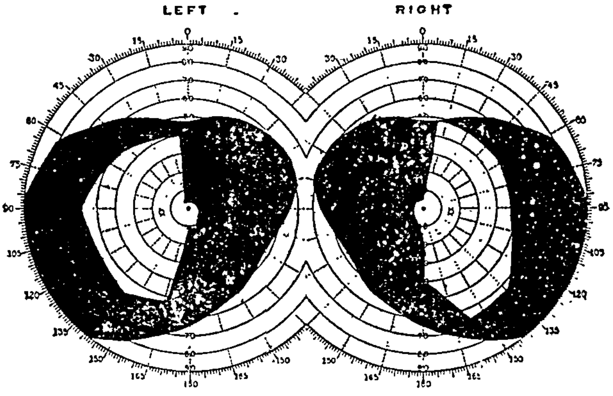

Chart 2.—Perimetric candle field, Aug. 5, 1912.

Neurologic Examination.—The gait was normal; Romberg's sign was present, but not very marked. There was no involvement of the cranial nerves other than the optic. Grip with both hands was strong; there was no ataxia of the upper extremities. Biernacki's sign was present. There were no muscular abnormalities, no trophic changes or sphincter disturbance. General sensibility was normal, with no astereognosis. Knee-jerks were normal; the Achilles tendon reflex was lost, both sides. There were no Babinski sign or ankle-clonus, no girdle sensation, lightning pains, visceral crises or loss of sexual power. Hysterical stigmata were absent.

Examination of the cerebrospinal fluid by Dr. E. D. Funk showed a lymphocytosis.

A Wassermann test, made by Dr. George F. Lull, was negative, which in all probability was due to the patient having been under mercurial treatment before the test was made. Since being under our observation the patient has taken potassium iodid freely, and had eighteen inunctions of mercurial ointment (1 dram each) before having the slightest tenderness of the gums, so that the therapeutic test may be said to have been positive. The urinary findings were negative.

A neurologic diagnosis of tabes was made. We consider this warranted by the combination of optic atrophy, slight Romberg sign, Biernacki's sign, loss of the Achilles tendon reflex, and a lymphocytosis of the cerebrospinal fluid.

The binasal defect in the visual fields we believe to be the result of a selective atrophy affecting the intracranial portion of the optic nerves.

1700 Walnut Street.

CASE OF STRANGULATED TUBO-OVARIAN HERNIA IN AN INFANT *

Arthur B. Eustace, M.D., and R. William McNealy, M.D.,
CHICAGO

In a contribution of recent date Heineck[1] presented an analytic review of all undoubted cases of tubo-ovarian hernia reported in the French, German and English medical literature from 1890 to 1910, inclusive.

He cited eighty cases of hernia of this type, in which thirty-five occurred in infants under 1 year of age. The large majority of those hernias occurring in infants were irreducible and showed evidence of strangulation at operation. There were only two fatalities reported from these thirty-five cases, although in four no end-results were given.

All hernias of this type occurring in children were in the inguinal region and femoral hernias in adults only, with special reference to this condition.

History.—A colored infant, aged 6 months, brought to our clinic Wednesday morning, had always been in perfect health except for hernia. The infant was breast-fed. The Sunday night previous the mother noticed that the "rupture" (which she had noticed soon after the child was born) had come down again following or during a severe crying-spell. She attempted to reduce it as she had been in the habit of doing many times before, but found that she was unable to do so.

The following day the child became noticeably restless and was constantly fretful and was taken to the family physician, who told the mother to apply hot applications to the tumor mass and return on the following day.

On Tuesday the external swelling had noticeably increased in size and showed evidence of inflammation, whereupon the mother took the child to another physician, who gave the child some "drops" and advised more hot applications to the swelling. During the night the child vomited twice and had a scant bowel movement.

Examination.—The infant, which appears well nourished and quite active, does not seem to be in any great distress. The abdomen is slightly distended. The right labium majus is swollen, red and very tender, pits on pressure and has a translucent appearance. The tumor mass is about the size of an English walnut. It is impossible to elicit either fluctation or pulsation. There is no evidence of vaginal discharge. The temperature is 103.4 F.

After a compilation of the data a diagnosis of strangulated inguinal hernia was made and immediate operation advised.

Operation.—The infant was given a preliminary colonic flushing. Under ether anesthesia a regular right inguinal incision was made, the inguinal canal exposed and the hernial sac delivered into the field of operation. The peritoneum was of a dark-brown chocolate color and the small vessels appeared to be thrombosed. The sac was opened and about 2 drams of bloody fluid escaped, exposing a black congested mass which was not immediately recognized. With gentle traction this mass was drawn down into the inguinal canal, whereupon it was found to be a tube, ovary and broad ligament. The right cornu of the uterus could easily be brought into the canal and the tubal attachment demonstrated. There was a torsion of the tube and ovary in a clockwise direction of about 180 degrees. The tube and ovary were immediately resected and the stump returned to the abdomen. The peritoneal sac was freed about the hernial ring, transfixed and ligated. The Andrews imbrication method was used to close the parietes. The skin was closed with running silkworm-gut and no drainage used. Gutta-percha and adhesive protection of wound was employed.

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* From their surgical clinic at the Post-Graduate Hospital, Chicago.

[1] Surg., Gynec. and Obst., xv, No. 1, p. 63.

The child was put to the breast twelve hours after the operation. She remained in the hospital for twelve days.

Pathologic Report.—Examination of a specimen of the tube and ovary revealed that the tube was edematous and showed necrotic areas. The blood-vessels were thrombosed and there was extravasated blood in the lumen. The ovary was gangrenous.

The excellent prognosis in these cases stands out in contradistinction to strangulations in which the intestines are involved.

4238 Indiana Avenue.—4254 Indiana Avenue.

GONORRHEAL INVOLVEMENT OF THE SKIN OF THE PREPUCE CURED BY UNUSUAL THERAPEUSIS*

M. Zigler, M.D., New York
Instructor in Genito-Urinary and Venereal Diseases in the Post-Graduate Medical School and Hospital, Chief of Clinic in Genito-Urinary Lebanon Hospital, Assistant Dermatologist Lebanon Hospital, Out-Patient Department

As most authorities assert such an involvement rarely if ever occurs, I report this case of a low-grade inflammation of the skin of the prepuce, due to gonorrhea.

History.—Wm. S., aged 20, contracted gonorrhea three years ago. Three weeks after the first attack he noticed an area of redness on the under surface of the prepuce and that on pressure pus exuded from several points. Numerous antiseptic solutions were used to heal this lesion with negative result. Escharotics were tried without success. After several unsuccessful attempts to induce the inflammatory process to heal by other means, the surgeon in charge laid it open by a longitudinal incision through its entire length. Two months after operation the affected area was slightly improved; that is, it was still red and inflamed but there was no oozing of pus and only an occasional watery (serous) discharge, which continued until about one month before he came under my observation, when it had again become purulent. The patient says that "on pressure drops of pus can be expressed from several points in the inflamed area."

Physical Examination.—In April, 1913, examination of the patient showed a long prepuce on the anterior surface of which, one-half inch from the tip, extending in the long axis of the penis, was a linear lesion about 1 inch in length, and a quarter of an inch in width, somewhat raised above the level of the surrounding skin, reddish and which felt like a cord or a thread under the skin. Yellowish-white pus could be expressed from three distinct points, one of which was at the tip near the distal end of the penis, the second in the middle of the lesion, and the third at the proximal end. When probed the points were found to be superficial.

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1097 Forest Avenue.

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Edward N. Reed, M.D., Clifton, Ariz.

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* Reported at the Bronx Medical Society, September, 1913, at the Lebanon Alumni Society, May, 1913.

New Instruments and Suggestions

A NEW SIGN IN PNEUMOTHORAX, PARTICULARLY ARTIFICIAL PNEUMOTHORAX

J. L. Pomeroy, M.D., Monrovia, Cal.

PRELIMINARY REPORT

In a careful study of over eleven cases of both spontaneous and artificial pneumothorax in pulmonary tuberculosis I have observed in every patient a condition of spasticity or rigidity of the rectus and abdominal muscles in the upper quadrant of the abdomen on the same side as the lesion. This "sign," as I so designate it, has been constant in every case. I have repeatedly pointed it out and had it verified by my associates. In my most recent case, a physician, on whom I performed artificial pneumothorax for persistent hemoptysis, the spastic condition of the left rectus (upper segment) and region of the epigastrium was so marked as to make a visible tumor. The patient noticed this himself and was much interested, as it seemed to vary in tenseness with the tension in the chest. This area is also hyperesthetic.

On account of the increasing amount of work done on artificial pneumothorax as a method of treatment for pulmonary tuberculosis, I am anxious to have other observers watch for this sign, so that it may be established or rejected as soon as possible. Reflex spasm of the abdominal muscles from lesions in the pleura, pericardium and other thoracic viscera is a well-established fact. To my knowledge its observance as a sign of pneumothorax is for the first time described. It has only recently been shown by Capps that the outer rim of the diaphragm and the parietal pleura are supplied by the lower intercostal nerves, and these also supply the skin and muscles over the abdomen. The patients on whom these observations were made were free from acute pleurisy, pericarditis and abdominal inflammatory conditions, as necropsy in two of the cases showed.

I trust that this sign, if verified, will prove a valuable guide in the production of an artificial pneumothorax. So far, this sign has persisted throughout the course of the condition, it was well marked, easily found and at times could actually be seen on inspection. I trust to publish in full a complete report giving details, and I hope that others will make similar studies.

CARE OF THE HEART IN PNEUMONIA

Robert Foster Fennell, M.D., Guntersville, Ala.

Since the care of the heart is of such vital import in the treatment of pneumonia, to recognize more clearly the conditions that modify the peculiar embarrassment under which it labors should be far more interesting to the clinician than the amount of lung-tissue involved in the process. This fact is of general but not universal knowledge among practitioners; and the point here to be brought out should not be a novel idea, but will go to show why the conditions surrounding the heart should be universally recognized and watched, rather than that an already overloaded heart should be strained and a very sick patient annoyed by too frequent examination of the lungs.

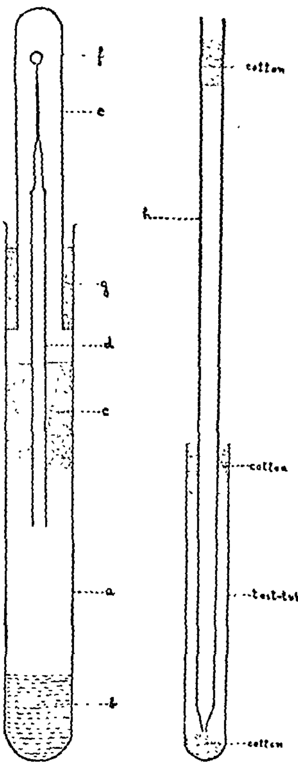
While we recognize the constant tendency to a decrease in the blood-pressure of the systemic circulation, we must not fail to consider the marked increase in the pressure of the pulmonic circulation and the additional work thus thrown on the right heart. When a heart is pumping against a mechanical obstruction of one or more solid lobes of the lung and is subjected to the action of toxins of a pneumonic infection, there is ever present a tendency to degeneration of the heart-muscle and subsequent dilatation. In the more severe types of the disease the fall of the systemic pressure may be so great as to make the radial pulse imperceptible, where the pressure may seem to have fallen below the point of heart's action; and still we have a hypernormal pulmonic pressure that is not only sufficient to furnish a stimulus for heart action but it may be so great as to cause dilatation of the right ventricle. The practical importance of a means to determine the pressure of the pulmonic circulation is a question. We are guided, however, by the aspect of the patient and by examination of the precardium as to the competency of the heart. Hence, the guide as to the immediate condition of a pneumonia patient is the quality of the pulmonic second sound of the heart, heard best in the second interspace just to the left of the sternum. So long as the sound of the pulmonary valves is accentuated and imparts a snapping quality we may rest assured that the right heart is doing its work well and the condition of the patient is good. If this quality is lost and cyanosis supervenes, the right heart is becoming incompetent to cope with the increased pulmonic pressure and dilatation is taking place.

In the presence of such a condition, would it be wise to administer strychnin or other vasoconstrictors and thus increase the load of an already overloaded heart? Would that not aggravate a condition we are trying to relieve? Would it not be better to give nothing? To relieve such a condition, it is necessary to reduce the pulmonic pressure (even if there is no radial pulse) and allow the heart an opportunity to reassert itself. To give the heart the greatest possible chance to recover, the patient should be placed in a semirecumbent position, which alone will decrease the work of the right heart and thus tend to equalize the pressure of the two circulations. Nitroglycerin, 1/100 grain, should be given every two hours if necessary, and signs of edema of the lungs watched for. If this condition becomes apparent, the nitroglycerin should be discontinued, and 1/100 grain of atropin given every two hours, with due caution after three doses. The whole body, except the head, should be enveloped in a mustard pack, and artificial heat applied. The patient should remain in the pack until the skin is red, and the pack repeated as often as necessary to retain redness.

A TUBE FOR COLLECTING BLOOD FOR CULTURES[*]

Frank A. McJunkin, M.D., Boston

To make a blood-culture carefully, not only is the inoculation of mediums in tubes and flasks usually required, but also the plating of the blood. As a result this part of the routine of a hospital laboratory is time-consuming and laborious, chiefly for the reason that much apparatus must be carried to the bedside, where the inoculations are always made under certain difficulties.



Tube for collecting blood for cultures.

With the idea of simplifying and improving the usual technic by making possible the plating of the blood and the inoculation of tubes and flasks in the laboratory, A. A. Epstein (*Am. Jour. Med. Sc.*, September, 1907) and C. Ryttenburg (*Jour. Med. Research*, 1906, N. S., xv, 79) have sufficiently tested an oxalate solution to show that it may be used to prevent the coagulation of blood without inhibiting the growth of any organisms which may be present. Their method has been to withdraw the blood with a syringe and force it out of the syringe into a tube which contains the ammonium oxalate solution. This tube is then carried to the laboratory, where the cultures are made.

In the collection of blood for Wassermann tests, in which perfect asepsis is not obligatory, a needle is inserted into the arm-vein and the blood run directly into a sterile tube. It is the ease and speed with which a large number of specimens of blood may be collected for this test that prompted the use of a tube with oxalate solution in it and a needle attached.

The preparation of the tube is simple. In a test-tube (*a*) which measures 25 by 200 mm. (Bausch and Lomb No. 16020) there are placed 15 c.c. of a solution which contains 2 gm. of ammonium oxalate and 6 gm. of sodium chlorid to the liter of distilled water. This is marked *b* in the illustration. Cotton 4 cm. wide (*c*) is now wrapped around the rubber tubing (*d*), which is 150 mm. long with a 1-mm. wall and 3-mm. lumen, and into the upper end of this tubing there is inserted a 19-gage needle 1 inch long (*e*). The needle is capped by inserting into the upper end of the large tube a smaller one (*f*) which measures 12 by 100 mm. (Bausch and Lomb No. 16920) and has wrapped around the lower end a 3-cm. plug of cotton (*g*). Both cotton plugs should fit snugly. The tube complete is autoclaved for twenty minutes at 110 C.

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[*] From the Pathological Laboratory of the Boston City Hospital.

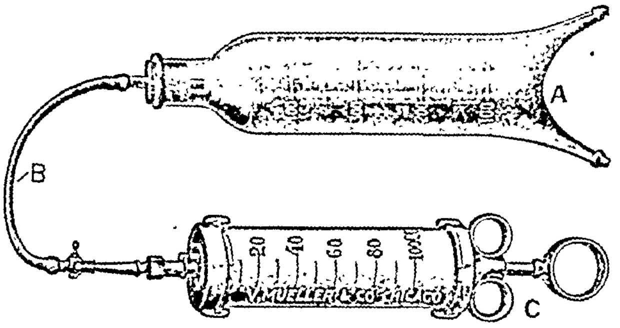
After the needle has been inserted into the vein, a few seconds are required for the blood to pass through the tubing. The lower cotton plug eliminates all chances of contamination, and when it is removed in the laboratory the upper end of the tube is flamed and the blood removed with a 10-c.c. sterile pipet (*h*). The tubing and needle are cleansed by forcing through them a few cubic centimeters of water from a syringe, after which they are placed in a saturated solution of borax.

RECENT EXPERIENCES WITH BLOOD TRANSFUSION *

Vernon C. David, M.D., and Arthur H. Curtis, M.D., Chicago

Three years ago we published a preliminary report on the transfusion of blood by a new method (The Journal, Jan. 7, 1911, p. 35).

In a first experiment, given in detail in that report, a simple outfit was used consisting of a 100-c.c. lubricated ground-glass syringe and cannula. Blood was withdrawn from a slit made in a vein, the apparatus removed, the cannula inserted into another vein and the blood injected.



Apparatus for blood transfusion: Blood enters only the paraffin-coated bulb, *A*, the cannula tips of which fit into the veins of donor and recipient. The rubber tube, *B*, and syringe, *C*, are used to exert positive and negative pressure.

This technic is quite satisfactory for transfusion of a small amount of blood. The procedure was described with the idea that it might be used for infants and in other instances in which a moderate amount of blood is required. We also experimented with the use of citrate solution to keep the blood from clotting and decided that it is inadvisable and unnecessary.

Two years after the publication of our paper, Cooley and Vaughan (A Simple Method of Blood Transfusion, The Journal, Feb. 8, 1913, p. 435) described the preceding method as original with them. Their technic differs in two respects; a smaller syringe is employed and there is omission of the petrolatum coat, two features in which we believe their technic is inferior.

In recognition of the fact that considerable blood is usually needed, an entirely different apparatus was advised for routine transfusion. Essential features included the use of a coat of liquid petrolatum to prevent clotting, and the employment of a Y cannula to connect the veins of donor and recipient. A syringe attached to the stem of the Y hastened the flow of blood and served as a collecting-chamber before injection into the recipient.

In October, 1911, we published further notes on transfusion, at which time was described the apparatus now used (The Journal, Oct. 28, 1911, p. 1453). In response to inquiries, and to express our present views, it seems desirable once more to describe the technic and to give a survey of our experiences to date.

The apparatus (see illustration) consists of a large glass bulb with two cannula tips. To assist the flow of blood a rubber tube and syringe provided with a two-way valve are attached to the bulb when needed. The glass bulb is sterilized by the dry method and the inner surface coated with paraffin. The paraffin coat is best applied by pouring about 50 c.c. of moderately warm melted paraffin into the cold bulb, which is then rotated to secure a uniform coat. The excess paraffin is then allowed to escape through the cannula tips. When the paraffin cools the tips are usually found to be occluded; they are slightly heated, gently shaken and rotated for a few seconds. The paraffin when once more solidified forms a satisfactorily uniform and delicate coat. The bulb thus prepared may be kept in sterile condition for many weeks, ready for instant use. Graduated bulbs of over 400-c.c. capacity have been found to be the most satisfactory; two should be in readiness, one with cannula tips about 3 mm. in diameter and one with tips of smaller size for transfusion of children and adults with unusually small veins.

TECHNIC OF OPERATION

Under local anesthesia with 1 per cent. novocain, a 1-inch incision is made over the most prominent vein of the elbow region of both donor and recipient. The donor's vein is then clamped at the distal end of the incision, stripped, ligated proximally and cut below the ligature. The recipient's vein is ligated distally, stripped, clamped at the upper end of the incision and cut just above the ligature. The open end of each vein is caught at three equidistant points with mosquito forceps and may be washed out with liquid petrolatum if desired. If a small vein is encountered it can be dilated gently with mosquito forceps. The cannula tips are moistened by dipping into liquid petrolatum, then inserted into the respective veins of donor and recipient and ligated in position.

Aided by the use of a shoulder constrictor, blood rapidly enters the bulb when the donor's vein is released. As the blood rises, a covering cap of liquid petrolatum is added to relieve surface tension. The rubber tube is now attached to the top of the glass bulb and the syringe is used to produce negative pressure. The bulb quickly fills. The donor's vein is then held with the fingers, the recipient's vein is released and the blood is introduced into the latter at any desired rate of flow. When the bulb is nearly empty the recipient's vein is held and that of the donor released, thus allowing the bulb to fill again with blood, after which the process is repeated as many times as is necessary.

Transfusion according to this method has been performed over fifty times on dogs with constantly satisfactory results. (The method recently described by Kimpton and Brown [The Journal, July 12, 1913, p. 117] is essentially a duplicate of ours, save that one cannula tip is done away with. This necessitates pulling the cannula out of the donor's vein and inserting it into the recipient every time the tube is filled, a maneuver which is unnecessary and which invites traumatism and clotting.) An amount sufficient almost to exsanguinate the donor has usually been transfused. To test the number of times the bulb might be refilled without difficulty, transfusion was made from the left to the right jugular vein of a dog; after nearly 4 quarts (3,600 c.c.) were transfused the apparatus continued to be in perfectly satisfactory working order.

We have now transfused a total of twenty-two human patients. Other methods were thoroughly tried, but the one here described has alone been satisfactory. In two instances success was incomplete. In our first case only 300 c.c. were obtained because of failure to use a constrictor around the arm of the donor. The second difficulty was encountered in the case of a delicate woman with unusually small cubital veins. The use of the child's-size cannula tips now obviates troubles of this nature.

Of cases not yet reported, the most striking result was obtained in a patient in the Presbyterian Hospital under the care of Dr. Clifford Grulee. A boy aged 3 acquired a rapidly progressive aplastic anemia and in three weeks' time presented a blood-picture with 2,600,000 red cells and 33 per cent. hemoglobin. Nov. 16, 1913, 475 c.c. of blood were transfused from the cubital vein of the father into the patient's external jugular vein. An abundance of blood was available, but when the child's pulse became bounding and his excessive pallor gave way to a cherry-red color the operation was discontinued. The red blood-cells numbered 4,300,000, hemoglobin 63 per cent. Red cells and hemoglobin fell moderately each day for several days, and then remained stationary for one day, after which began a rise which continued until recovery. In addition to conclusions stated in previous papers, we would

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* From the Memorial Institute for Infectious Diseases; aided by a grant from the Fenger Memorial Fund.

New Instruments and Suggestions

A NEW SIGN IN PNEUMOTHORAX, PARTICULARLY ARTIFICIAL PNEUMOTHORAX

J. L. Pomeroy, M.D., Monrovia, Cal.

PRELIMINARY REPORT

In a careful study of over eleven cases of both spontaneous and artificial pneumothorax in pulmonary tuberculosis I have observed in every patient a condition of spasticity or rigidity of the rectus and abdominal muscles in the upper quadrant of the abdomen on the same side as the lesion. This "sign," as I so designate it, has been constant in every case. I have repeatedly pointed it out and had it verified by my associates. In my most recent case, a physician, on whom I performed artificial pneumothorax for persistent hemoptysis, the spastic condition of the left rectus (upper segment) and region of the epigastrium was so marked as to make a visible tumor. The patient noticed this himself and was much interested, as it seemed to vary in tenseness with the tension in the chest. This area is also hyperesthetic.

On account of the increasing amount of work done on artificial pneumothorax as a method of treatment for pulmonary tuberculosis, I am anxious to have other observers watch for this sign, so that it may be established or rejected as soon as possible. Reflex spasm of the abdominal muscles from lesions in the pleura, pericardium and other thoracic viscera is a well-established fact. To my knowledge its observance as a sign of pneumothorax is for the first time described. It has only recently been shown by Capps that the outer rim of the diaphragm and the parietal pleura are supplied by the lower intercostal nerves, and these also supply the skin and muscles over the abdomen. The patients on whom these observations were made were free from acute pleurisy, pericarditis and abdominal inflammatory conditions, as necropsy in two of the cases showed.

I trust that this sign, if verified, will prove a valuable guide in the production of an artificial pneumothorax. So far, this sign has persisted throughout the course of the condition, it was well marked, easily found and at times could actually be seen on inspection. I trust to publish in full a complete report giving details, and I hope that others will make similar studies.

CARE OF THE HEART IN PNEUMONIA

Robert Foster Fennell, M.D., Guntersville, Ala.

Since the care of the heart is of such vital import in the treatment of pneumonia, to recognize more clearly the conditions that modify the peculiar embarrassment under which it labors should be far more interesting to the clinician than the amount of lung-tissue involved in the process. This fact is of general but not universal knowledge among practitioners; and the point here to be brought out should not be a novel idea, but will go to show why the conditions surrounding the heart should be universally recognized and watched, rather than that an already overloaded heart should be strained and a very sick patient annoyed by too frequent examination of the lungs.

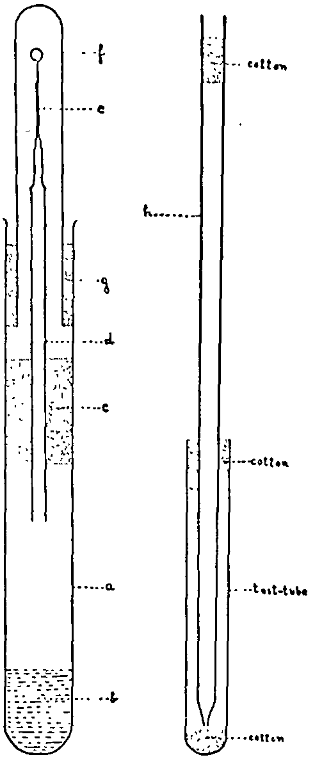
While we recognize the constant tendency to a decrease in the blood-pressure of the systemic circulation, we must not fail to consider the marked increase in the pressure of the pulmonic circulation and the additional work thus thrown on the right heart. When a heart is pumping against a mechanical obstruction of one or more solid lobes of the lung and is subjected to the action of toxins of a pneumonic infection, there is ever present a tendency to degeneration of the heart-muscle and subsequent dilatation. In the more severe types of the disease the fall of the systemic pressure may be so great as to make the radial pulse imperceptible, where the pressure may seem to have fallen below the point of heart's action; and still we have a hypernormal pulmonic pressure that is not only sufficient to furnish a stimulus for heart action but it may be so great as to cause dilatation of the right ventricle. The practical importance of a means to determine the pressure of the pulmonic circulation is a question. We are guided, however, by the aspect of the patient and by examination of the precardium as to the competency of the heart. Hence, the guide as to the immediate condition of a pneumonia patient is the quality of the pulmonic second sound of the heart, heard best in the second interspace just to the left of the sternum. So long as the sound of the pulmonary valves is accentuated and imparts a snapping quality we may rest assured that the right heart is doing its work well and the condition of the patient is good. If this quality is lost and cyanosis supervenes, the right heart is becoming incompetent to cope with the increased pulmonic pressure and dilatation is taking place.

In the presence of such a condition, would it be wise to administer strychnin or other vasoconstrictors and thus increase the load of an already overloaded heart? Would that not aggravate a condition we are trying to relieve? Would it not be better to give nothing? To relieve such a condition, it is necessary to reduce the pulmonic pressure (even if there is no radial pulse) and allow the heart an opportunity to reassert itself. To give the heart the greatest possible chance to recover, the patient should be placed in *a semirecumbent position, which alone* will decrease the work of the right heart and thus tend to equalize the pressure of the two circulations. Nitroglycerin, $\frac{1}{100}$ grain, should be given every two hours if necessary, and signs of edema of the lungs watched for. If this condition becomes apparent, the nitroglycerin should be discontinued, and $\frac{1}{100}$ grain of atropin given every two hours, with due caution after three doses. The whole body, except the head, should be enveloped in a mustard pack, and artificial heat applied. The patient should remain in the pack until the skin is red, and the pack repeated as often as necessary to retain redness.

A TUBE FOR COLLECTING BLOOD FOR CULTURES*

Frank A. McJunkin, M.D., Boston

To make a blood-culture carefully, not only is the inoculation of mediums in tubes and flasks usually required, but also the plating of the blood. As a result this part of the routine of a hospital laboratory is time-consuming and laborious, chiefly for the reason that much apparatus must be carried to the bedside, where the inoculations are always made under certain difficulties.



Tube for collecting blood for cultures.

With the idea of simplifying and improving the usual technic by making possible the plating of the blood and the inoculation of tubes *and flasks in the laboratory*, A. A. Epstein (*Am. Jour. Med. Sc.*, September, 1907) and C. Ryttenburg (*Jour. Med. Research*, 1906, N. S., xv, 79) have sufficiently tested an oxalate solution to show that it may be used to prevent the coagulation of blood without inhibiting the growth of any organisms which may be present. Their method has been to withdraw the blood with a syringe and force it out of the syringe into a tube which contains the ammonium oxalate solution. This tube is then carried to the laboratory, where the cultures are made.

In the collection of blood for Wassermann tests, in which perfect asepsis is not obligatory, a needle is inserted into the arm-vein and the blood run directly into a sterile tube. It is the ease and speed with which a large number of specimens of blood may be collected for this test that prompted the use of a tube with oxalate solution in it and a needle attached.

The preparation of the tube is simple. In a test-tube (*a*) which measures 25 by 200 mm. (Bausch and Lomb No. 16920) there are placed 15 c.c. of a solution which contains 2 gm. of ammonium oxalate and 6 gm. of sodium chlorid to the liter of distilled water. This is marked *b* in the illustration. Cotton 4 cm. wide (*c*) is now wrapped around the rubber tubing (*d*), which is 150 mm. long with a 1-mm. wall and 3-mm. lumen, and into the upper end of this tubing there is inserted a 19-gage needle 1 inch long (*e*). The needle is capped by inserting into the upper end of the large tube a smaller one (*f*) which measures 12 by 100 mm. (Bausch and Lomb No. 16920) and has wrapped around the lower end a 3-cm. plug of cotton (*g*). Both cotton plugs should fit snugly. The tube complete is autoclaved for twenty minutes at 110 C.

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* From the Pathological Laboratory of the Boston City Hospital.

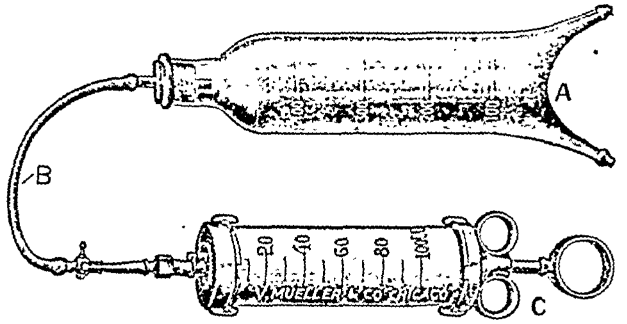
After the needle has been inserted into the vein, a few seconds are required for the blood to pass through the tubing. The lower cotton plug eliminates all chances of contamination, and when it is removed in the laboratory the upper end of the tube is flamed and the blood removed with a 10-c.c. sterile pipet (*h*). The tubing and needle are cleansed by forcing through them a few cubic centimeters of water from a syringe, after which they are placed in a saturated solution of borax.

RECENT EXPERIENCES WITH BLOOD TRANSFUSION *

Vernon C. David, M.D., and Arthur H. Curtis, M.D., Chicago

Three years ago we published a preliminary report on the transfusion of blood by a new method (The Journal, Jan. 7, 1911, p. 35).

In a first experiment, given in detail in that report, a simple outfit was used consisting of a 100-c.c. lubricated ground-glass syringe and cannula. Blood was withdrawn from a slit made in a vein, the apparatus removed, the cannula inserted into another vein and the blood injected.



Apparatus for blood transfusion: Blood enters only the paraffin-coated bulb, *A*, the cannula tips of which fit into the veins of donor and recipient. The rubber tube, *B*, and syringe, *C*, are used to exert positive and negative pressure.

This technic is quite satisfactory for transfusion of a small amount of blood. The procedure was described with the idea that it might be used for infants and in other instances in which a moderate amount of blood is required. We also experimented with the use of citrate solution to keep the blood from clotting and decided that it is inadvisable and unnecessary.

Two years after the publication of our paper, Cooley and Vaughan (A Simple Method of Blood Transfusion, The Journal, Feb. 8, 1913, p. 435) described the preceding method as original with them. Their technic differs in two respects; a smaller syringe is employed and there is omission of the petrolatum coat, two features in which we believe their technic is inferior.

In recognition of the fact that considerable blood is usually needed, an entirely different apparatus was advised for routine transfusion. Essential features included the use of a coat of liquid petrolatum to prevent clotting, and the employment of a Y cannula to connect the veins of donor and recipient. A syringe attached to the stem of the Y hastened the flow of blood and served as a collecting-chamber before injection into the recipient.

In October, 1911, we published further notes on transfusion, at which time was described the apparatus now used (The Journal, Oct. 28, 1911, p. 1453). In response to inquiries, and to express our present views, it seems desirable once more to describe the technic and to give a survey of our experiences to date.

The apparatus (see illustration) consists of a large glass bulb with two cannula tips. To assist the flow of blood a rubber tube and syringe provided with a two-way valve are attached to the bulb when needed. The glass bulb is sterilized by the dry method and the inner surface coated with paraffin. The paraffin coat is best applied by pouring about 50 c.c. of moderately warm melted paraffin into the cold bulb, which is then rotated to secure a uniform coat. The excess paraffin is then allowed to escape through the cannula tips. When the paraffin cools the tips are usually found to be occluded; they are slightly heated, gently shaken and rotated for a few seconds. The paraffin when once more solidified forms a satisfactorily uniform and delicate coat. The bulb thus prepared may be kept in sterile condition for many weeks, ready for instant use. Graduated bulbs of over 400-c.c. capacity have been found to be the most satisfactory; two should be in readiness, one with cannula tips about 3 mm. in diameter and one with tips of smaller size for transfusion of children and adults with unusually small veins.

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* From the Memorial Institute for Infectious Diseases; aided by a grant from the Fenger Memorial Fund.

emphasize the value of transfusing large amounts of blood. As will be noted, in the case reported, a pint of blood was required to raise the hemoglobin of a 3-year-old child from 33 to 63 per cent. A profound anemia in an adult is not appreciably relieved with less than a quart of blood.

104 South Michigan Avenue.—7 West Madison Street.

A NEW CULTURE-MEDIUM FOR THE GONOCOCCUS

J. O. Hirschfelder, M.D., San Francisco

In order to satisfy the demand for the gonococcic extract described in The Journal, April 5, 1913, it was necessary to use large quantities of the micro-organism. It was found that it was impossible to grow them in sufficient numbers on the mediums ordinarily employed. By using the following culture-medium all difficulties were removed:

Two hundred gm. of bullock's testicle, ground with a sausage-grinder, were boiled with 1,000 c.c. of water made alkaline with sodium hydroxid so that 10 c.c. required 1 c.c. tenth-normal acid to neutralize to phenolphthalein. This was filtered, and 1 part of this testicular extract was added to 3 parts of agar prepared as follows:

	gm. or c.c.
Veal bouillon	1,000
Saturated solution of sodium phosphate made neutral to phenolphthalein with phosphoric acid	100
Agar	30

Agar so prepared can be autoclaved, and on it the gonococcus grows readily.

275 Post Street.

New and Nonofficial Remedies

The following additional article has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Its acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and cor-ections are asked for to aid in the revision of the matter efore publication in the book "New and Nonofficial emedies."

The Council desires physicians to understand that the cceptance of an article does not necessarily mean a ecommendation, but that, so far as known, it complies ith the rules adopted by the Council.

W. A. Puckner, Secretary.

TRYPSIN, Fairchild.—The proteolytic enzyme of the pancreas, separated to a considerable extent from the other enzymes and constituents of the gland and of a definite strength.

Actions and Uses.—Trypsin acts in a slightly alkaline medium on proteins and nucleoproteins, converting them into peptones and polypeptids, and carries the splitting so far as to partly break down these structures into the amino-acids. It acts best at a temperature of 40 C. Trypsin is largely destroyed in the stomach and there is very little reason to expect any action from it in the intestine when it is given by the mouth.

Trypsin is used for the partial digestion of food outside the body. A complete splitting into amino-acids is to be avoided.

Dosage.—Trypsin may be given in doses of 1 grain (equal to from 4 to 5 grains Pancreatin, U. S. P.) and upward, best in a capsule with some diluent, as milk-sugar, and if indicated, with sodium bicarbonate. It is locally applied in solution or after trituration of the trypsin with some appropriate diffusible powder.

Manufactured by Fairchild Brothers and Foster, New York. No U. S. patent or trademark.

Trypsin, Fairchild, is a fine dry powder, in which form the enzyme is permanent when protected from moisture. It is slowly but not completely soluble in water.

Trypsin, Fairchild, has from four to five times the strength of Pancreatin, U. S. P. The tryptic power of Fairchild's trypsin by the method *proposed* by Sir William Roberts is 10,000 units.

Therapeutics

SHOCK AFTER OPERATION

Physicians, surgeons, anesthetists and laboratory scientists are not agreed as to the best treatment for this condition, or whether there is any best treatment. Dr. S. T. Pope[1] of San Francisco has recently presented a paper describing his experimental study of shock in animals. The results of various treatments of shock induced in animals by bleeding are graphically demonstrated by blood-pressure tracings. The uselessness of many drugs used in shock is apparently proved from the experimental point of view.

The clinical objection to drawing positive conclusions from laboratory findings and applying such conclusions practically in the operating-room is that a patient suffering from shock has rarely lost much blood. Also, the patient has generally been subjected to the nervous strain of apprehension for some time before the operation is performed. There has also been a more or less prolonged abstinence from food, depending on the rule of procedure of the operator or the anesthetist. The method of producing anesthesia is also important; that is, whether or not preinjections of morphin, scopolamin or other alkaloids have been made, or whether or not Crile's method of preventing shock has been followed. The cause of shock in a person operated on is very different from that in an animal, which, by bleeding or other measures, is deliberately shocked. Consequently, successful treatment not only may be, but perhaps must be, different.

Many incontrovertible truths are offered by Dr. Pope. There is no question that when drugs are administered hypodermatically, it must take a considerable time in minutes (the length depending on the drug used) before any results can be expected in improved cardiac strength or blood-pressure. In the next place, it is not always justifiable to conclude that a drug administered hypodermatically has exactly the same action as when administered intravenously. The intensity of the intravenous action is very different from the slowly absorbed or possibly local (irritant?) action of a drug administered hypodermatically.

While camphor is shown by Pope to be of no value in shock when given to animals intravenously and to cause an actual fall in blood-pressure, when administered in the usual manner, subcutaneously, the circulation is certainly improved by its use, although, in discussion, he stated that this improvement may be only apparent, in that the amplitude of the pulse is increased, although the blood-pressure may not be. In any case, when a pulse is almost absent at the wrist and improves under the action of camphor subcutaneously, and the color returns to the patient's face, we must believe that the camphor has caused some improvement of the person in shock. Also, it is a fact that there is no after-depression following such camphor injections. The same improvement was often found when, a few years ago, brandy or whisky was administered subcutaneously, or when, as often in Germany in previous years, ether was so given. From reflex irritation, before much was absorbed, the circulation certainly improved. Later, after absorption, however, the depression increased. That is, the future of alcohol as a stimulant is bad, while the future of camphor in ordinary dosage is apparently good.

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[1] Pope, S. T.: California State Jour. Med., December, 1913, p. 499.

Pope shows what the profession should learn more rapidly, that, in serious conditions, strychnin does not raise the blood-pressure, and may do harm to a worn-out, fluttering, rapid heart. On the other hand, in prolonged shock, when the nerve-centers appear to be sluggish, the impulses apparently lack tone, and the patient seems to be slowly dying with cerebral and nervous apathy, strychnin is certainly valuable, in not too large doses.

The sudden dilatation caused by nitroglycerin seems pharmacologically entirely incorrect in shock. The increase in peripheral circulation which it causes can better be secured by the use of dry heat and perhaps general massage or friction.

Pope does not mention atropin. This alkaloid is very slow in its action, but it is a respiratory and cardiac stimulant and generally improves the arterial pressure. Therefore, whatever immediate treatment of a patient is used, a sufficient dose of atropin may well be given hypodermatically to act in a few hours, if other measures save the patient from immediate death.

Some physicians have occasionally employed cocain in shock. Because of its pharmacologic activities, its use appears inexcusable.

Digitalis in any form does not seem indicated in shock, but strophanthin, given intravenously, has been repeatedly shown (and again by Pope) to cause an improved heart-action and increased blood-pressure. This drug does not act so well when given subcutaneously or intramuscularly.

As we would expect, injection of epinephrin is shown by Pope to cause an enormous rise in blood-pressure. He does not tell us how long this rise was sustained, but its action has been found so evanescent that few clinicians or surgeons now rely on it. To be of value, a minute dose must be constantly administered, intravenously, in physiologic saline or in Ringer's solution. At times it has seemed that subcutaneous injections of epinephrin solution were valuable for more or less continuous improvement, this probably because such local contraction is caused that but a little is absorbed at a time; so that such an injection may give continuous epinephrin treatment for some time. On the other hand, there is danger of abscesses from such disturbance of the tissue as epinephrin can cause.

Pope did not experiment with the pituitary blood-pressure-raising agent, but such extracts seem to be more valuable than epinephrin in conditions of shock. The blood-pressure rise is not so great, but is more prolonged, and the action on the medullary centers is more satisfactory, as epinephrin may cause respiratory depression. Also, pituitary extracts are more or less diuretic.

Caffein, given intravenously, is shown by Pope not to raise the blood-pressure, but apparently even to lower it. It is a question whether caffein, given by mouth or rectum or hypodermatically, would ever reduce the blood-pressure, even if it did not raise it immediately. There can be no disputing the fact that caffein can cause a great deal of irritability, palpitation and weakening of the force of the heart. Also, some patients show a very disturbing idiosyncrasy to caffein. Generally, however, in depressed circulatory conditions, as in mild shock or when disturbed circulation occurs in serious illness, caffein is one of the best circulatory stimulants that we possess.

Pope well urges that when rapid breathing has occurred prior to or during an operation, and the patient is in a condition of acapnia, and the blood-pressure has fallen from loss of carbon dioxid, as well demonstrated by Henderson, the patient really is suffering also from oxygen starvation. Such a patient needs oxygen, perhaps administered mixed with carbon dioxid; but artificial respiration, or respiration by means of a pulmotor, or the administration of small doses of oxygen (not to hyperoxygenate the patient), or the administration of oxygen mixed with carbon dioxid, are positively essential.

Pope urges that with the respiration and circulation improving through the oxygen inhalations, the carbon dioxid will again be formed in the tissues and the patient will develop the carbon dioxid stimulation of the blood-vessels and the respiratory center. In this way he interprets Henderson's findings for practical application in the operating-room. He does not speak of inverting the patient and thus increasing the blood-pressure at the base of the brain. Such simple physical therapy should never be forgotten.

On the other hand, a prolonged Trendelenburg position can cause disturbed heart-action, or even a heart-block, Pope says, "due either to acute dilatation, to toxins, or fatigue, or sepsis, or coronary clots, or direct trauma to some area of cardiac reflex." It is quite possible, however, that from this position slight edema or exudate into the fourth ventricle may occur and may disturb the respiratory and pneumogastric centers. In shock from this cause, Pope suggests venesection from the jugular vein, cardiac massage and epinephrin in Ringer's solution forced backward in the arterial stream, as giving the only possible chance for recovery.

If respiration is stopped from obstruction, an entirely different condition arises. All that is needed, when this occurs, is to lift the jaw, pull forward the tongue, clean out the mouth and larynx, and use artificial respiration or a pulmotor.

A good immediate treatment of shock, until a better is offered, would be to start artificial respiration or respiration by means of the pulmotor at once; to raise the feet and legs if the patient has not been in a Trendelenburg position; to give one or more hypodermics of camphor (with all due respect to the objection of Dr. Pope); to administer atropin sulphate $^1/_{100}$ grain for its future action (provided atropin in some form has not already been administered as a prelude to the anesthesia); to give strophanthus intravenously if deemed advisable; or to give a hypodermatic injection of pituitary extract, unless it shall be shown to be of no great value. The patient should be surrounded with hot-water bags; friction of the extremities is advantageous; coffee may be administered by rectum, unless it is considered of advantage to give caffein hypodermatically, this also for its future action if the patient quickly improves from the activities of the more immediately acting drugs.

Simple Treatment for Ringworm.—C. Hughes Foley in the *Lancet*, Jan. 24, 1914, describes his method of treating ringworm which is as follows: The diseased area is first washed with strong solution of sodium bicarbonate and swabbed with spirit of ether to remove grease. It is then painted with tincture of iodin and sprayed immediately with ethyl chlorid until the integument gets china white. The deeper the disease process the longer the spray must be applied. In ringworm of the scalp three or four applications may be necessary, but on smooth surfaces one application usually suffices.

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SATURDAY, MARCH 7, 1914

THE SUPRARENALS AND VASOMOTOR TONUS

The discovery of the blood-pressure-raising potency of extracts of the suprarenal glands and the final isolation of epinephrin as the active substance involved therein has served for some time to direct attention anew to the possible function of the organs which produce it. For half a century before this the correlation of the suprarenals with Addison's disease and the experimental demonstration of their indispensability for life made by Brown-Séquard and others, had awakened some interest in the question as to how these glands serve the organism. But the study of their real physiologic significance unquestionably received a new impetus from the classic investigations of Oliver and Schäfer. Since their memorable communication in the spring of 1894, the vasomotor properties of the suprarenal glands have been continually studied by the scientific world. Later, beginning with the observations of the remarkable effect of the suprarenal substance on the sympathetic nervous system, Langley and Elliott showed that epinephrin injected into the circulation arouses every activity which can be normally excited by stimulation of the sympathetic system. A list of the responses elicited by the active principle of the suprarenal bodies is to-day regarded as essentially identical with a list of the chief functions of the sympathetic nervous system. Glycosuria is likewise among the symptoms which can be induced by administration of epinephrin.

In view of all these phenomena the suprarenal bodies are clearly entitled to be regarded as the source of an important internal secretion. In the blood issuing from them, evidences of the presence of some epinephrin can be obtained. A recent text-book by a prominent physiologist[1] states accordingly that we must without much doubt ascribe to the medulla of the suprarenal capsules, as well as to the other chromaffin tissue in the body, the function of maintaining the normal constriction of the arterioles and of facilitating in some way or other the functions of the sympathetic nervous system generally. This statement indicates the direction of present-day emphasis.

Experimentally, epinephrin has proved to be endowed with properties that would make it serve as a typical hormone. It is a substance of comparatively low molecular weight, easily diffusible, having a drug-like excitatory action on specific tissues of the body, and being rapidly destroyed after having discharged its office. Shall we therefore assume that it acts as a continually renewed stimulus serving to maintain the tonicity of the blood-vessels? This is evidently a widely current belief. Hoskins and McClure[2] have furnished a definite reply. They maintain that the actual quantities of epinephrin present at any moment even in the veins issuing from the suprarenal bodies, in which the concentration must be higher than elsewhere in the organism, is decidedly too small to maintain any pressor effect. If this be true, then admittedly the normal tonus of the blood-vessels cannot be ascribed to the perfusion with epinephrin. The conclusion that vasoconstrictor and supposedly other sympathetic fibers are not under a tonic influence exerted by the suprarenals is fortified by the failure to observe prompt fall of pressure due to loss of vasomotor tone when the influence of the glands is excluded for a time by ligation.[3]

Evidence of another sort leads in precisely the same direction. Trendelenburg[4] has compared the blood-pressure before and after complete extirpation of the suprarenal bodies. By excluding the modifying effects of narcosis, operative interference, etc., through the application of new experimental methods, he has been able to observe a constancy of blood-pressure independent of the supposedly necessary presence of the glands. It must not be erroneously inferred from this that they are not essential to life, for animals deprived of them invariably die. It is merely contended that their removal does not so promptly lower blood-pressure as one would expect if the tonus of the vessels were entirely dependent on a continuous stimulation by fresh supplies of the evanescent internal secretion of the suprarenals. This statement leaves the possible contributory function of other chromaffin tissues untouched.

If it has thus become questionable, to say the least, that the vasomotor, and perhaps the entire sympathetic apparatus is kept in tonic activity by a persistent minimal suprarenal discharge, it seems fairly well demonstrated that during times of special stress the suprarenal secretion is increased, whereby the influence of the sympathetic nervous system is augmented or reinforced. Through some mechanism like the latter there may be a marked increase in muscular efficiency. Suprarenal extirpation always finally results in circulatory failure. The facts, however, that circulating epinephrin is quickly destroyed, whereas the weakness following the removal of the glands develops hours or days afterward, and that the asthenia is shared by skeletal muscle which has no sympathetic innervation, indicate, as Hoskins and McClure suggest, that epinephrin effect is due rather to an interference with the nutritional processes in the tissue. Now that some of the unjustified deductions of recent years have been discarded, it may become profitable to devote more attention to the metabolic and other aspects of suprarenal function.

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[1] Starling, E. H.: Principles of Human Physiology, 1912, p. 1325.

[2] Hoskins, R. G., and McClure, C. W.: The Adrenal Glands and Blood-Pressure, Arch. Int. Med., October, 1912, p. 343.

[3] Compare Hoskins, R. G., and McClure, C. W.: The Relation of the Adrenal Gland to Blood-Pressure, Am. Jour. Physiol., 1912, xxx, 192.

[4] Trendelenburg, W.: Ueber die Beziehungen der Nebennieren zur normalen Blutdruckhöhe, Ztschr. f. Biol., 1914, lxiii, 155.

POPULAR BELIEFS AND SCIENTIFIC FACTS

Popular beliefs on scientific subjects apparently run in waves. Many of our readers remember the interest in hypnotism which followed the publication of "Trilby." Svengali with his "hypnotic eye" at once became a real and possible personage in the public imagination. The newspapers were full of stories of girls and women who had suddenly been fixed and paralyzed by the hypnotic gaze of some mysterious stranger with piercing black eyes and who had been compelled by his will to fantastic acts which they were powerless to prevent. Fiction writers took up the idea, and stories centering around hypnotic influence became common. It was used as a plea in criminal cases, various culprits alleging that they had been hypnotized and compelled against their will to perform unlawful acts. All this occurred in spite of the fact, frequently stated and known by every scientific man, that the limitations of hypnotism are definite and well recognized, that no person can be hypnotized unknowingly or against his will, and that few persons are so susceptible as to be capable of being compelled to perform acts beyond their own volition and knowledge.

Another popular fiction which later on took the place of hypnotism was that of instantaneous anesthesia. Stories appeared in the newspapers of women who had been accosted by strangers and, under some pretext, had permitted a cloth or a handkerchief to be pressed momentarily over their mouth and nose. Immediate unconsciousness was said to have followed, resulting in a period of insensibility and irresponsibility, varying from a few minutes to hours or even days. Chloroform sprayed into an open window by means of an atomizer, anesthetics tied to a rag on the end of a pole and thrown into a bedroom, instant unconsciousness following the administration of drugs unknown to physicians and pharmacists, were some of the variations of this idea. In the minds of physicians and nurses who see every day the administration of anesthetics, such stories only excite mirth. Any one who knows the difficulty and labor of securing unconsciousness through the use of anesthetics, even under the most favorable conditions and with every possible means of restraining and controlling the patient, knows how absurd such stories are.

A latter-day variation of these popular beliefs may be found in the "poisoned needle" stories which have been going the rounds of the press recently. A woman goes to a moving-picture theater, enters a crowded elevator, a street-car, or elevated train, or is caught in the press of a crowd. Suddenly she sees, close beside her, our old friend the "mysterious stranger," with the piercing black eyes and the compelling manner. At the same time, she feels a sting and knows that she has been stabbed with a poisoned needle. She immediately becomes unconscious, dazed or irresponsible for a greater or less period of time, during which she experiences a number of marvelous adventures or hair-breadth escapes.

It is not possible to say that no woman was ever without her knowledge given a drug hypodermically which produced unconsciousness. It can, however, be said very positively that there is no drug known to scientific men which could be administered in the manner or which would produce the effect described in recent newspaper reports.

One of the laws of hysteria is that when any peculiar phenomenon is reported, similar instances immediately appear throughout the country. We may now expect a spring crop of magazine stories and popular novels based on the poisoned needle as a motive. Scientifically, the thing is as ridiculous and impossible as hypnotism of an unwilling subject or instantaneous anesthesia. Popular beliefs travel in waves, and hysteric and excited imaginations help them along. The history of popular delusions, from Salem witchcraft to present-day vagaries, is full of such instances.

ATMOSPHERIC TEMPERATURE AND PNEUMONIC PLAGUE

Why plague of the bubonic type should prevail in epidemic form over such long periods of time, whereas plague pneumonia has for the most part been confined to numerous scattered cases, has been one of the mysteries of epidemiology. That pneumonic plague can assume epidemic proportions under certain circumstances was, however, demonstrated most conclusively in Manchuria during the winter of 1910-1911 by one of the most virulent epidemics of modern times. Epidemiologists are at present probably all agreed that air infection plays no part in the spread of bubonic plague. As Chapin[1] pointed out in THE JOURNAL in an excellent review of the subject of air infection, a fine example of the modern scientific method is found in the development and demonstration of the theory that plague is primarily a disease of rodents, and that it is spread to man almost exclusively through the agency of fleas. In accord with this, bubonic plague may be treated in general hospitals without danger, if only the place is kept free from vermin. In the case of pneumonic plague, on the other hand, the disease is usually highly contagious. It is now believed that the disease is easily air-borne, presumably by droplets; and the studies of Strong and Teague[2] in Manchuria have done much to substantiate this theory.

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[1] Chapin, C. V.: The Air as a Vehicle of Infection, THE JOURNAL A. M. A., Feb. 7, 1914, p. 423.

Teague and Barber[3] have offered an explanation of the rapid spread of pneumonic plague in Manchuria and its failure to spread in India. It seemed probable to them that the plague bacilli contained in fine droplets of pneumonic-plague sputum would suffer death from drying in a few minutes unless they were suspended in an atmosphere with extremely small water deficit. Such an atmosphere is, under ordinary circumstances, of common occurrence in very cold climates, whereas it is extremely rare in warm ones. Hence, since the droplets of sputum persist longer in the cold atmosphere, the plague bacilli remain alive longer in the air, and there is a greater tendency for the disease to spread in cold climates than in warm ones.

It is in accord with such a hypothesis that during the Manchurian epidemic the temperature at Harbin (where the great majority of deaths occurred) ranged between — 9 and — 32 C. (from 15.8 to — 25.6 F.). The disease is spread indoors, however; so that it has remained to ascertain whether the temperatures of inns and lodging houses in Harbin in which plague patients were actually found would lend support to the general contention. Recent statistics gathered by Teague[4] leave no doubt that the native inns and similar buildings are very inadequately heated in winter. Several of them showed temperatures of 6 C. (41 F.) or less, and records of 10 C. (50 F.) were quite common. Teague has further learned of a small epidemic of pneumonic plague occurring in southern Brazil during the cool season at a place where the houses are not artificially heated. Such facts favor the opinion that atmospheric temperature is an important factor in determining the spread or failure to spread of pneumonic plague.

SOME EXTREMES IN NUTRITION

Amid all the active discussion current at present regarding the protein requirement of healthy man it is interesting to compare the extreme values which come to light in different parts of the world, either as the result of experiment or the record of habits. Nothing can more effectively warn against the unwisdom of dogmatic statements about this aspect of our dietary needs than the recital of two entirely unlike experiences which have lately been published. The Danish physiologists August and Marie Krogh[5] organized an expedition not long ago to investigate the dietary habits and metabolism of the Eskimos at the island of Disco in Western Greenland. It was observed that the normal ration of these people contains enormous quantities of protein and fat, whereas the intake of carbohydrate is very small. Half of the latter type of foodstuff is taken in the form of the glycogen present in the meat consumed. The eating-habits of the Eskimo approach those of carnivorous animals to the extent that the periods at which the diet is eaten are irregular and somewhat infrequent, the meal under these circumstances occasionally being extended to the utmost capacity of the stomach. Despite this we are told that no nutritive disorders are apparent aside from incidental furunculosis and frequent nose-bleeding in the periods of overliberal food ingestion. The physical endurance of Eskimos nourished in this way is conspicuous, as is their resistance to the rigors of the climate. Diseases involving uric acid are extremely rare. The highest food consumption actually measured by the Kroghs was 1,804 gm. (nearly 4 pounds) of boiled meat in one day, corresponding to 85 gm. of nitrogen and 218 gm. of fat. This is said to be far below a record figure, however. The utilization of these large portions of meat is satisfactory, the loss of nitrogen in the feces rarely exceeding from 3 to 5 gm. per day. A urinary output of nitrogen amounting to 53 gm. per day was actually determined. When the extremes of meat ingestion occur, the dependence of the output of urea on the volume of the kidney secretion is clearly manifested.

The other extreme of protein possibilities is exemplified in the latest studies of Hindhede[6] in Copenhagen. His interesting subject was able to maintain himself in excellent nutritive equilibrium and muscular efficiency through long periods of months, not merely days, on a diet essentially composed of potatoes and margarin. The necessary intake of potato was extremely large, amounting to 2 kg. (4 pounds), which we fancy few persons could manage to consume day after day. On this diet it was actually possible to maintain nitrogen equilibrium with an intake of nitrogenous matter amounting to only 3.62 gm. of digestible nitrogen a day, and with a total daily intake of 3,900 calories. When hard work had to be performed it was necessary to increase the potato fraction of the regimen to no less than 4 kg. (8 pounds) or more per day, together with liberal additions of fat, so as to bring the entire energy content up to about 5,000 calories with only 10 gm. of digestible nitrogen. It is interesting to note that no dilatation of the stomach resulted even from these monster meals.

Again, Dr. Folena[7] of the Hygiene Institute in Pisa has succeeded in his own case in effecting nitrogen balance on the minimum intake of 33 to 39 gm. of nitrogenous substance, a quota of about 0.6 gm. per kg. of body-weight per day. The protein requirement to induce nitrogenous equilibrium was not profoundly increased by hard work. Obviously these minimal figures must not be applied to the requirements obtaining under conditions of growth or repair. The figures of Folena are somewhat lower than those recorded in the widely known investigations of Chittenden[4] on the protein minimum.

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[2] American Medical Men in Dangerous Posts, editorial, THE JOURNAL A. M. A., Jan. 11, 1913, p. 130.

[3] Teague and Barber: Philippine Jour. Sc., B., Tropical Med., 1912, vii, 172.

[4] Teague, O.: A Further Note on the Influence of Atmospheric Temperature on the Spread of Pneumonic Plague, Philippine Jour. Sc., B., Tropical Med., 1913, viii, 241.

[5] Krogh, A., and M.: A Study of the Diet and Metabolism of Eskimos, Copenhagen, Bianco Luno, 1913.

[6] Hindhede, M.: Studien ber Eiweissminimum, Skandin. Arch. f. Physiol., 1913, xxx, 97.

[7] Folena, V.: Esperienze sul minimo di azoto nella razione alimentare normale in regime di riposo e di lavoro, Ann. d'ig. sper., 1913, xxii, 297.

In the face of the extremes here reviewed one may well inquire whether many of the rigid rules and dietary dicta of physicians who adhere to "systems of diet" have a justification in fact. Obviously the adaptability of the human body to wide ranges of food possibilities is not inconsiderable. It is, of course, eminently desirable to learn the limits which the nutritive practices cannot overstep with physiologic safety. When once these are established, however, there is usually left free play for the application of common sense, culinary judgment, and individual preference in times of health and disease alike. The successful dietitian will utilize these factors in the practical application of the modern lessons of the science of nutrition.

THE EXPENSIVE SANDWICH

The wide-spread interest in scientific circles as well as in the ranks of social workers concerning some of the problems of nutrition among the masses is exemplified by current discussions regarding school lunches, institutional dietaries, economical menus for the household, and the cost of living. These are constantly bringing out the fact that diet customs are subject to wide inequalities in character in different parts of the world and in different strata of society; and they further make it clear that food habits are not so fixed as was once supposed, but are varied to meet economic changes and alterations incident to the shifting of population. Rubner has remarked that the scene of the changes witnessed in the nutrition of the masses lies in the cities, the country districts representing the conservative factor and adhering more closely to the dictates of tradition.[5] It is in the cities that the most noticeable of the modern changes in dietary customs, such as the increasing consumption of meat and the introduction of ready-to-eat foods, have first taken hold on greater numbers of individuals. Furthermore, the questions of diet in large institutions almost always need to be solved with reference to the local market conditions.

Max Rubner, the eminent physiologist and hygienist of Berlin, has lately presented some interesting data on one of the many transformations in dietary custom which is peculiarly conspicuous in the cities of Germany.[6] It is the rapidly growing tendency to introduce widely what corresponds in general to the American sandwich (*das belegte Brot*) into the daily food-intake. Anyone who observes carefully the eating habits of working men in this country and who has followed the enormous increase in the lunch-counter scheme of dietetics among our own population must admit that the sandwich is something more than a trivial incident in the nutrition of those who live in populous districts. Physiologically, it involves the supplementing of bread — the common "staff of life"— with considerable fat (butter) and animal protein (meat). The sandwich represents a new step in the evolution of bread-and-butter combinations. Rubner believes that the growing use of the meat-laden sandwich is attributable, in Germany at least, to the increased employment of tea and coffee, which require some substantial adjuvant, and also to the greater consumption of sugar and alcohol. The latter lead to a lowering of the protein of the diet which is thus equalized by the albuminous sandwich. Added to these factors is the growing tendency, especially among the unmarried classes, to eat outside of the home and to patronize the rapid-service, time-saving, sandwich-dispensing restaurants and eating-houses.

The average composition of the sandwich, if we may identify this for the purpose of argument with its German competitor, shows that it differs from plain bread in the predominant addition of fat with some increase in protein. One can attach but little value to the "average" composition of so heterogeneous a group of products as is represented by bread-and-meat mixtures of all varieties. Broadly speaking, the comparison afforded shows that 100 calories are distributed in the different food materials as follows:

	Calories		
	Protein	Fat	Carbohydrate
In bread	11	3	86
In bread and butter..	5	58	37
In meat sandwiches...	15	53	32

The great concentration of nutrients in a small volume in the sandwich at once becomes apparent here. The work of mastication is reduced and the entire make-up of the product encourages rapid eating with its possibly unfavorable consequences.

The sandwich, as here represented, exemplifies a tendency to increase rather than diminish the proportion of food of animal origin in the dietary of man; but aside from the fact that it is instituting a larger participation in the use of meat and is thus working contrary to what many students of dietetics regard as desirable, this form of food is not as economical as is popularly believed. It is true that a palatable sandwich can be purchased for a few cents. The same proportionate expenditure in the household or in the purchase of a warm meal that deserves the name will procure surprisingly more nutriment, even in the more expensive type of restaurant. It has been calculated, for example, that twenty-five cents will buy:

	Calories		Gm. protein
In a public eating-house....	3,990	containing	108
In a good restaurant.......	1,990	containing	78
In the form of sandwiches...	1,140	containing	30

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[4] Chittenden, R. H.: Physiological Economy in Nutrition, New York, 1904; The Nutrition of Man, New York, 1907.

[5] Rubner, M.: Wandlungen in der Volksernährung, Leipsic, 1913.

[6] Rubner, M., and Schulze: Das "belegte Brot" und seine Bedeutung für die Volksernährung, Arch. f. Hyg., 1913, lxxxi, 260.

The sandwich is frequently looked on as the "poor man's lunch" and current practice is tending to increase its use. If it is really desirable to increase the purchasing power of a small daily income so as to augment the part devoted to nutriment, the reform cannot be instituted by pointing to the supposedly inexpensive lunch-counter. The boarding-house and the home wisely administered on the dietetic side still remain the most economical as well as most rational centers for food reforms.

Current Comment

MILK IN MANILA

To those patient sanitarians who, often without much public support, are toiling among us with unflagging energy in the interest of "clean milk," we may offer a bit of indirect encouragement by reciting the incomparably greater trials and tribulations of their colleagues in far distant lands. The quality of fresh milk that is placed on the market in the city of Manila often leaves more to be desired than the least exacting of our local reformers would demand. One reason for this, we are told,[1] is that the cows from which a large proportion of the milk is obtained are kept outside of the city limits, and are the property of persons who probably have only one cow each, and no fixed place of abode. For this reason such enforcement of regulations as is possible in the United States is impracticable in Manila. Much of the milk comes also from the carabao, or water-buffalo. The fats and some other important ingredients in this are often double those found in cow's milk. That it may resemble cow's milk, the milk of the carabao is frequently diluted one-half or more with water. The proteins are then in disproportion, so rice flour is added. If the fats have thus been too greatly reduced, cocoanut oil is sometimes added. This conglomeration, of which one specimen showed a bacterial count of 62,000,000 per cubic centimeter, is not always an ideal mixture for the purpose of human nutrition.

WHAT IS AN ENZYME?

Although everyone realizes that enzymes are without question closely related to the life-processes of the cells and are in some cases the products of their manufacture, it must still be frankly admitted that we have not yet succeeded in characterizing the so-called ferments as definite chemical substances. In truth, nothing conclusive can be stated as to their constitution, nor can they be classified consistently among any of the familiar groups of organic compounds which have a biologic import. Enzymes, in the past, have frequently been assigned to the category of proteins. The reason for this has been that the fermentative properties of certain solutions have usually been associated with the protein fractions contained therein. With respect to their behavior in precipitation, dialysis, alteration by heat, and other properties, the analogy between proteins and enzymes has appeared to be close; so that, pending the extension of knowledge with respect to the chemistry of proteins, some excuse was present for identifying the enzymes as protein in make-up. The enzymes are undoubtedly colloidal in character; and in order to isolate them in greater purity the methods commonly applied to other colloids have been used. The fact that many "purified" enzymes give protein reactions may merely mean that the albuminous material is dragged along mechanically in attempting to isolate the enzymes. Most of the methods for the preparation of them have been such as to justify this assumption. Ohta[1] has succeeded in getting evidence of vigorous enzymatic activity in preparations that are actually free from protein. By digesting commercial emulsin—the enzyme which acts on glucosids like amygdalin—with pancreatic extracts, he has digested away the protein ordinarily found in the crude preparations on the market and has completely removed the proteolytic products by dialysis. The purified emulsin thus prepared was entirely devoid of protein, yet showed the typical hydrolytic action on amygdalin and salicin vigorously. The supposed protein attributes of enzymes must, accordingly, be abandoned.

NEW MEMBER OF THE COUNCIL ON PHARMACY AND CHEMISTRY

As will be noticed elsewhere, Dr. Carl L. Alsberg, chief of the Bureau of Chemistry of the Department of Agriculture, has been elected a member of the Council on Pharmacy and Chemistry. Dr. Alsberg was born in New York City in 1877, his father being a graduate of the University of Jena, and one of the founders of the American Chemical Society. The new member of the Council received his A.B. degree at Columbia University in 1896, and his master's and medical degrees at the same university in 1900. From then until 1903 he did postgraduate work in pharmacology, physiologic chemistry and internal medicine in various foreign universities, studying also at that time with Schmiedeberg, one of the leading pharmacologists of Germany. In 1902 he was appointed assistant in biologic chemistry at the Harvard Medical School, with leave of absence extending for two years to continue his work in Europe, especially at the University of Berlin. In 1905 he became instructor in biologic chemistry at the Harvard Medical School, and jointly with a colleague of the same rank was placed in charge of the department of biologic chemistry. In 1908 he resigned his position at the Harvard Medical School to accept one in the Bureau of Plant Industry of the Department of Agriculture, and in 1912 he was appointed by President Taft as chief of the Bureau of Chemistry, succeeding Dr. Harvey W. Wiley. It is fortunate that the Council can have in its membership men in the front rank in the various branches of medical science. The medical profession is certainly to be congratulated on being able to obtain the cooperation and advice of such men as Dr. Alsberg in the cause to which the Council is devoted. We feel very sure that few of our readers appreciate the amount of work entailed by membership in the Council, and the fact that this work is done without any remuneration whatever by men who are recognized authorities.

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[1] See the Annual Report of the Bureau of Health for the Philippine Islands for the fiscal year, July, 1912, to June 30, 1913, Manila, 1913, p. 14.

[1] Ohta, K.: Darstellung von eiweissfreiem Emulsin, Biochem. Ztschr., 1913, lviii, 329.

DOES OXIDATION TAKE PLACE IN THE LUNGS?

It was Lavoisier, the first discoverer of the true importance of oxygen, to which he gave its present name, who not only believed that the life-processes were those of oxidation, with the resulting liberation of heat, but also looked on the lungs as the seat of the utilization of oxygen and the production of carbon dioxid. Later it was suggested that if the combustion processes really take place in the lungs the greatest heat would be developed there. This, however, does not happen. Subsequently the idea gained ground that the biologic oxidations take place in the blood, a fluid known to be rich in the essential oxygen as well as in the products of combustion. To-day there is all but unanimous agreement that the energy-yielding oxidations of the body take place in the tissues rather than in the circulating blood. In recent years Bohr and Henriques[1] have again taken up Lavoisier's view regarding the importance of the lungs. They have not claimed that all oxidations are conducted in these organs, but rather believe that some of the combustion processes begun in various tissues of the body furnish incompletely destroyed intermediary products which experience complete oxidation in the lungs. This contention coming from physiologists of note has commanded attention and aroused much criticism. It has remained for the London investigators, *Evans and Starling,*[2] *to furnish convincing* evidence of the fact that the lungs do not participate in the oxidative processes. The results of their experiments all indicate that not only in normal tissues supplied with the normal amount of oxygen, but also in conditions of extreme oxygen lack, oxidations begun in the tissues are completed there. The lungs do not exercise any general or specific activity in completing oxidations partially carried through in other tissues.

DENTAL DISPENSARY FOR ALBANY SCHOOLS

The city of Albany, New York, has developed an excellent system of "health direction in the public schools," which it is the aim of the medical director to extend considerably beyond the usual concept of mere medical inspection of schoolchildren. Recently a dental dispensary has been added which aims to take care of the teeth of children who are not able to pay for the services of a dentist. A set of card-blanks has been provided for keeping a record of the dental work done for the pupils. One of the cards contains sociological data concerning the family from which the pupil comes. The cards given to the children recording appointments and granting admission to the dispensary contain practical admonitions to the pupil and parents as to the importance of *taking care of the teeth,* their influence on the physical and mental development and the bearing of proper development on future success in life, all of which should have a wholesome educational influence. The school work in Albany is an example of how a scientific foundation along lines of school hygiene can be made successful through the cooperation of progressive *citizens, trained educators and child hygienists.* The dental dispensary is not the least valuable department of this feature of the health work in the public schools.

RELATION OF WATER-SUPPLIES TO AMEBIC DYSENTERY

Inasmuch as amebic dysentery, though long unrecognized, has hitherto been one of the greatest obstacles to the progress of the white man in the peaceful conquest of the tropics, details regarding it have more than passing interest. A critical study of the incidence of the disease and the literature in relation thereto does not support the belief that the native dweller of the tropics is any more immune to amebic dysentery than is the white man of the temperate zone. Amebas are widely distributed in nature. The question has been raised whether all the varieties found in drinking-water and other places where amebic dysentery prevails are pathogenic. There has been considerable hesitation in some places in using water-supplies, the chemical composition and biologic analysis of which was reasonably good, but which contained amebas. Dr. E. L. Walker, the acting chief of the biologic laboratory of the Bureau of Science at Manila, now reports that it is possible to distinguish *between pathogenic and non-pathogenic amebas,* and that the ordinary water-ameba found in the Philippines is harmless to man.[1] This is said to accord largely with similar experience in Panama and other tropical countries, and is of far-reaching importance from the point of view of public health. It will now be possible to permit the use of water against which no other charge than the presence of amebas could be made. Furthermore, it emphasizes more than ever the danger of transmission which centers in the infected individual.

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[1] See the Annual Report of the Bureau of Health for the Philippine Islands for the fiscal year July 1, 1912, to June 30, 1913. Manila, 1913, p. 102.

Medical Education in the United States.—The *Scientific American,* quoting from an interesting report on this subject by Graham Lusk, published in *Science,* states that in spite of the campaign for higher standards waged by the Council on Medical Education of the American Medical Association and other agencies, there are still four states in which it is not necessary that an applicant for medical license be a graduate of a reputable medical college, while in the year 1912 the authorities of Tennessee presented the spectacle of licensing 175 persons [including 33 who were granted temporary licenses after having failed to pass the required examination] who were not graduates of any medical school whatever. As to the medical schools themselves, however, it is gratifying to learn that quality has improved at the expense of quantity. Lusk gives the number of schools in this country as diminished from 166 to 110 since 1904. [The correct figures should show a diminution of medical schools in this country from 160 to 106 since 1904.]

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[1] Bohr, C., and Henriques, V.: Arch. de physiol. norm. et path., 1897, ix, 559, 590, 819.

[2] Evans, C. L., and Starling, E. H.: The Part Played by the Lungs in the Oxidative Processes of the Body, Jour. Physiol., 1913, xlvi, 413.

Medical News

CALIFORNIA

Personal.—Dr. Frederick J. Smith, San Diego, was seriously injured, January 22, by being crushed under his overturned automobile.——Dr. Franklin F. Lord, San Francisco, has been seriously ill as the result of an overdose of chloroform, self-administered, on account of insomnia.——Dr. Al. P. O'Brien, member of the board of public health and surgeon of the police department of San Francisco, returned from a trip to the Orient, February 2.

To Assist Accident Board.—Dr. Morton R. Gibbons, medical director of the Industrial Accident Commission of the San Francisco City Compensation Department, has named more than one hundred surgeons in various parts of the state as medical representatives of the department, and twenty-five referees. The duties of the first class will be to treat individuals insured under policy commissions of the State Compensation Department, and of the latter class to inspect the injuries in disputed cases.

COLORADO

Municipal Laboratory Established.—A city laboratory has been installed at Pueblo, with Dr. Carl W. Marynard in charge, which is prepared to do all kinds of bacteriologic work of value from the public health point of view.

Personal.—Dr. Alfred P. Busey, Denver, was seriously injured, February 16, while alighting from a train at Pueblo. ——Dr. Edward W. Lazell, Denver, has been detailed to duty in the Southern coal strike district to investigate an outbreak of spinal meningitis among the troops at Aguila.——Dr. Edward F. Lake, Denver, is reported to be ill with malignant disease in Baltimore.——Dr. Alexander T. King has been appointed vice-president of the Civil Service Board of Pueblo.

New Officers.—Northeastern Colorado District Medical Association at Sterling, February 11: president, Dr. Melvin R. Fox; secretary-treasurer, Dr. N. Eugenia Barney (reelected), both of Sterling.——Solly Society, named after Dr. S. E. Solly in recognition of his work in the scientific treatment of tuberculosis, organized at Colorado Springs, January 23: president, Dr. Charles F. Gardiner; secreary-treasurer, Dr. J. J. Mahoney. ——Boulder County Medical Society at Boulder: president, Dr. James A. Matlack, Longmont.—Medical Society of the City and County of Denver: president, Dr. Carroll E. Edson; secretary, Dr. William M. Wilkinson, both of Denver.——Pueblo County Medical Society at Pueblo: president, Dr. W. Frederick Singer.——Las Animas County Medical Association at Trinidad: president, Dr. Edward J. Scannell, Trinidad; secretary, Dr. William M. Ogle, Terico.

CONNECTICUT

New Officers.—Hartford Medical Society, January 26: chairman, surgical section, Dr. Alfred M. Rowley; secretary of society, Dr. C. Brewster Brainard.——New Haven Medical Society, January 21: president, Dr. Willis H. Crowe; secretary, Dr. Charles E. Sanford.

Bulletin in New Form.—After twenty-seven years of continuous publication, the *Monthly Bulletin* of the Connecticut State Board of Health appears in new form; smaller in size and more convenient to handle. The first issue for January contains in addition to the vital statistics, notes on the pasteurization of milk and the vaccination propaganda.

Personal.—Dr. John F. Sullivan has been elected president of the Board of Health of New Haven.——Dr. Harry F. L. Locke has been appointed surgeon in charge of the Hartford Isolation Hospital.——Dr. Edward B. Hooker has been elected president of the Hartford Society for the Prevention of Tuberculosis.——Dr. Frederick H. Williams, Bristol, is reported to be seriously ill at his home.

FLORIDA

Dispensary Opened.—A free dispensary has been opened in Jacksonville in the basement of the City Engineering Building. The dispensary will be open from 3:30 to 5:30, Monday, Wednesday and Friday afternoons.

Dairy Wins Medical Society Cup.—V. C. Johnson of the Dinsmore Dairies, Jacksonville, was presented with the silver loving-cup offered by the Duval County Medical Society for the dairy showing the cleanest milk throughout the year 1913.

Ocala has Board of Health.—The city council of Ocala, Fla., has recently passed an ordinance establishing a board of health and appointed Dr. H. F. Watt as city health officer. The ordinance provides for milk, school and market inspection, and other progressive features of well-organized health departments.

Personal.—Dr. J. H. Mills, Tampa, has recovered from an illness of several days.——Dr. Stanley Erwin, Jacksonville, has returned from the Everglades, where he has been treating Indians for hookworm disease.——Dr. George H. Benton announces the opening of his offices in Miami and also the opening of the Sterling-Worth Sanatorium.——Dr. James D. Love, Jacksonville, has been appointed a member of the State Board of Medical Examiners, vice Dr. J. D. Fernandez, deceased.

New Officers.—Putnam County Medical Association organized at Palatka, February 11: president, Dr. George E. Welch; secretary, Dr. J. Cohen Chandler, both of Palatka.——Orange County Medical Society at Orlando: president, Dr. Calvin D. Christ; secretary-treasurer, Dr. Gaston H. Edwards (reelected), both of Orlando.——Bay County Medical Society: president, Dr. D. M. Adams, Panama City; secretary, Dr. James M. Nixon, Millville. Dr. Juriah Pierpont, Pensacola, chairman of the State Council, addressed the society on the importance of organization.

Jacksonville Bacteriologist Retained.—When the budget committee of the city council of Jacksonville prepared the budget for the year 1914, the salary of the city bacteriologist and chemist was not provided for. At a recent public hearing before the finance committee of the council to which a resolution was referred requesting an appropriation for funds to pay the salary of the bacteriologist, strong protests for the retention of the bacteriologist were made by the Duval County Medical Society, the Woman's Club, the Mother's Club, Infant Welfare Society, dairymen and other civic organizations with the result that the finance committee reported favorably to the council and the present incumbent, Dr. W. G. McKay, was retained.

GEORGIA

New Home for Medical Society.—The Georgia Medical Society expects to open its new home in Savannah with a reception some time this month.

New Officers.—Twelfth District Medical Society, at Dublin, January 28: president, Dr. Jefferson D. Herrman. Eastman; secretary-treasurer, Dr. Clinton R. Riner, Summit.

Personal.—Dr. W. R. Winchester, Macon, is critically ill as a result of a cerebral hemorrhage, February 22.——Drs. William H. Doughty and William W. Battey, Augusta, are reported to be seriously ill at their homes.

Surgeons' Club Travels.—The Georgia Surgeons' Club, headed by Dr. Edward C. Davis, Atlanta, left Atlanta February 26, to attend the clinical meeting at New Orleans, February 27 and 28. In addition to the New Orleans program. the club is to make a tour of the surgical clinics of Europe, terminating at the Clinical Congress of North America in London, July 27.

Medical Staff of Hospital.—The following have been named on the medical staff of the Macon Hospital for the year beginning February 1: Dr. Olin H. Weaver, chairman; Dr. Charles C. Harrold, vice-chairman; Drs. Herring Winship, Max Jackson, Joseph R. B. Branch, Frank M. Cunningham, Allen B. Jemison, Harry Moses, James T. Ross, Will D. Hereford, John P. Holmes, Samuel B. Palmer, Thomas E. Blackshear, Charles H. Richardson and William C. Pumpelly.

IDAHO

New Officers.—Pocatello Medical Society, January 21: president, Dr. Edward N. Roberts; secretary-treasurer, Dr. Joseph V. Clothier.

Pre-Medical Course for University.—The Pre-Medical Club of the University of Idaho, Moscow, which was organized recently to urge a two-year pre-medical course at the university, decided to postpone action on the part of the club until the arrival of the new president of the university in April.

Praise for Health Officer.—The work of State Sanitary Inspector James H. Wallis, in cleaning up the state of various sanitary abuses, has received high praise in an article in the *World's Work* for March. The article describes the results obtained by the inspector in compelling reforms in the sanitation and food supply of Pullman dining cars running through Idaho and in cleaning up various slaughter houses, restaurants, hotel kitchens and dairies throughout the state, and in the seizure of various shipments of adulterated foods shipped into the state. In doing this work in regard to foods, it was necessary for him to be appointed a federal inspector of foods by the Department of Agriculture. The vigorous work of Inspector Wallis also extended to the patent medicine people and drug manufacturers who misbrand their preparations.

ILLINOIS

Personal.—Dr. Franklin H. Martin, Chicago, has returned from abroad.——Dr. William G. Hawkey, Belvidere, who has been seriously ill with septicemia, due to an operation wound, is reported to be improving.——Dr. Howard L. Beye, Chicago, has been appointed assistant in surgery at the University of Iowa.

Contagious Diseases in the University.—Both scarlet fever and small-pox have been found among the students at the State University at Champaign. Many students have gone home and many others were vaccinated. There have been three deaths from scarlet fever; one, Miss Ona Reno, a nurse in the Julia F. Burnham Training School, who contracted the disease while nursing one of the students who died. The other fatal case was that of Mrs. Harry L. Lingren. On February 26, there were sixteen students ill with scarlet fever.

Honor Retired Surgeon-General.—The medical officers of the Illinois National Guard extended a testimonial banquet, February 25, to Brig.-Gen. S. C. Stanton, who was retired as surgeon-general of the state under the army and militia reorganization law of January 1. Maj. Daniel W. Rogers acted as toastmaster. Brig.-Gen. F. S. Dickson, the adjutant general, chief of staff, made the principal address and at its conclusion presented the guest of honor with a gold Swiss repeater watch, suitably decorated and engraved, on behalf of the medical officers of the state. Dr. Stanton is the last of a triumvirate of surgeon-generals to be retired with the rank of a general officer. The other two were the late Nicholas Senn and Brig.-Gen. Charles Adams.

Chicago

New Rules Regarding Contagious Diseases.—The Health Department has published a new set of rules governing contagious diseases, to become effective March 1. The change consists in a reorganization of the Bureau of Medical Inspection and a revision of the rules and regulations for the care and handling of communicable diseases. The latter involves a lessening of the hardships of quarantine. The city has been divided into 100 school inspection districts, to each of which is assigned one health officer and one nurse. The work of the health officer will be confined to medical inspection of school-children and the exclusion of those with contagious and parasitic diseases. The 100 school districts will be divided into five supervision health officers' districts. The school districts will also be combined into fifty field districts, to each of which an officer will be assigned for field work solely in connection with contagious diseases. The fifty field districts will be combined into twenty-five quarantine districts, each in charge of a quarantine officer, and each group of ten field and five quarantine districts will be under a supervising health officer. The combined field service will be supervised by six inspectors on full time, working from the headquarters of the department. It is asserted that the violators of the quarantine regulations constitute the greatest factor in contagious disease control. Without relaxing in the matter of effective isolation, it is proposed under the new regulations to let up somewhat on the restrictions with respect to the coming and going of working members of a family. In the majority of instances it is expected that they may live at home during the illness of the isolated member and still be permitted to come and go as necessity demands. The new plan and rules are printed in the *Bulletin* of February 21, in which details are given of the measures to be carried out in each particular communicable disease.

MARYLAND

Appointments to State Institutions.—The governor has made the following appointments: board of managers of the State Sanatorium, Sabillasville, Dr. Henry Barton Jacobs, Baltimore, and Dr. Guy Steele, Cambridge.

Children's Ward at Hospital.—A children's ward is to be opened at St. Joseph's Hospital March 19, through the efforts of the Junior Auxiliary, a recently formed organization. The purpose of the auxiliary is to look after the ward and do everything possible for the comfort and relief of the little sufferers.

Personal.—Dr. Fred Caruthers, Baltimore, former coroner of the Northeastern District, who has been suffering from blood poisoning for the past two weeks at the Franklin Square Hospital, is said to be improving.——Dr. George W. Dobbin, Baltimore, is confined to his home on account of a severe sprain of the knee.

Infant Mortality.—Infant mortality in Baltimore compares favorably with that in other states. This work of saving the infants has been by a systematic welfare movement carried on by cooperating public and private agencies. Dr. Jones declares that the figures show a great saving in life compared with the years when the activities for purifying the babies' milk and instructing mothers was not so great. "It is hoped," he says, "that the good work which has been started will continue, and that the coming years will see an even greater decrease in the loss of infant life."

Conference of the Maryland Conservation Association.—Dr. William H. Welch, chairman of the administrative committee of the Johns Hopkins University, in McCoy Hall, opened the second day's session of the Conference of the Maryland Conservation Association. Dr. Welch introduced Dr. Hugh S. Cumming, U. S. P. H. S., who spoke on the "Bearing of Pollution of Tidal Water on Health and the Necessity of Control of Pollution." Dr. Leslie L. Lumsden, U. S. P. H. S., talked on "The Value to Maryland of the Control of Water-Carried Diseases in Town and County and the Measures Necessary to Accomplish It." In his remarks, Dr. Lumsden stated that the death-rate of Baltimore city from typhoid fever could be decreased 90 per cent. by "providing pure water for its people." The truth of this statement was illustrated by the record of Cumberland, where pure water was put into the homes in December and in the first month the typhoid fever rate fell from an average of 40 to 4. He also stated that a peculiar thing about the pure water-supply was that it reduced also the death-rate from pneumonia and tuberculosis.

The Health Congress.—Plans for the Public Health Conference to be held March 9-14 in Osler Hall, Baltimore, have been arranged. On the opening night Mayor Preston and Governor Goldsborough are expected to be present, and addresses will be made by Dr. Leslie L. Lumsden, Washington, D. C., and Dr. Harvey G. Beck. For the following night, Tuesday, a program will be arranged on the timely subject of cancer and radium. The local representatives of the American Society for the Control of Cancer will make the arrangements. On this same evening, H. L. Mencken will speak on how to reach properly the millions through the press. On Wednesday, Mrs. Isaac L. Rice of New York will make an address on "The Noiseless City," and E. A. Thompson, smoke inspector of Baltimore, will discuss the "Smokeless City." On Thursday there will be a symposium on municipal care of infectious diseases. On Friday, Dr. Robert W. Johnson and Charles J. Bonaparte will discuss the relation of the medical profession to the public. On Saturday, John Daniels, secretary of the Social Service Corporation, will make an address on "Needed—A Health Survey," and Rev. M. H. Lichliter will talk on a "New Social Conscience."

Sex Hygiene for Public Schools.—The question of teaching social and sex hygiene in the public schools was brought up at a meeting of the Baltimore School Board February 25, when Dr. Edward W. Janney appeared before the body in company with one of the women members of the alumnae association, asking permission to deliver an address on that subject before an audience of teachers at the Western High School. While Dr. Janney said he had not taken the initiative in the matter, he said he had been approached on the matter and asked to deliver such an address by the president of the alumnae association. In a short address he outlined to the members of the board what he thought was a necessity and deemed it highly important that such a course of instruction should be inaugurated in the schools, in order that the sexes might be informed on the subject. Because of the questionable need for such a radical and debatable plan the board preferred not to take immediate action and it was referred to a committee. It seems that this matter has been brought to the attention of some members of the board previously and before the matter was referred the propriety of such a departure was doubted and protests against it by some of the teachers have been received; some of them intimated that they would refuse to treat the subject in their school, even if they were permitted to do so by the action of the school board. It was plainly evident that the idea did not meet with the approval of the members of the board.

MASSACHUSETTS

Public Lectures.—The eighth of the series of free public lectures given under the auspices of the Harvard Medical School was given at that institution, February 22, by Dr. E. W. Taylor on "Some Causes of Nervous Instability."

Personal.—Dr. Francis W. Peabody has been appointed medical member of a commission which will be sent to China by the Rockefeller Foundation, to study the needs and opportunities for improving medical education, hospitals and public health administration. In this work he will be associated with President Judson of the University of Chicago.——Dr. Edward Clark Streeter has been appointed a member of the board of managers of the Boston Dispensary.

Reorganization of State Board of Insanity.—The Massachusetts State Board of Insanity has been virtually reorganized. Governor Foss, before his retirement, appointed Dr. Vernon Briggs in place of the chairman, Dr. Herbert Howard, and Hon. James M. W. Hall in place of Dr. E. W. Taylor. Governor Walsh, on assuming office, appointed Mr. Roger Walcott to succeed Dr. William F. Whitmore. A new executive officer is now to be chosen; Dr. Daniel E. Fuller, deputy executive officer, has resigned to take up work in Philadelphia.

MICHIGAN

New Officers.—Cheboygan County Medical Association, at Cheboygan, February 17: president, Dr. William F. Reed; secretary, Dr. Charles B. Tweedale, both of Cheboygan.

Anti-Tuberculosis Society Meeting.—At the annual meeting of the Kalamazoo Anti-Tuberculosis Society, the following physicians were unanimously reelected to office: Dr. Herman Ostrander, president; Dr. S. Rudolph Light, treasurer.

Liberal Contributions to Sanatorium.—The campaign to secure an additional fund for an annex to the Detroit Tuberculosis Sanatorium is meeting with favor; more than $22,000 has already been subscribed toward the $62,000 needed by the institution.

Luncheon for Veteran Physicians.—Twenty members of the Ingham County Medical Society gave a luncheon, February 23, in honor of Drs. Julius A. Post and George E. Ranney, both of Lansing, the oldest members of the profession in Ingham County. Dr. Samuel Osborn, Lansing, presided at the dinner.

Medical Aid Bureau to Open.—The Grand Rapids Social Welfare Association has established a medical aid bureau under the direction of Dr. Burton R. Corbus. The bureau is to be used for the examination and diagnosis of cases under the care of the Social Welfare Association, for patients who are able to come to the physician's office, and who are not in need of the services of a nurse.

Berrien County Physicians Shun Publicity.—At the meeting the Berrien County Medical Society at Benton Harbor, February 12, a resolution was unanimously adopted setting forth that indiscriminate advertising by the medical profession is contrary to medical etiquette and disgusting to reputable physicians as suggestive of quackery, and instructing the secretary to request newspapers of the county not to give attending physicians' names when giving an account of sickness, operations, injuries, etc.

Personal.—Dr. Martin A. Mortensen, Battle Creek, has returned from Europe.——Dr. and Mrs. William F. Hake and Dr. and Mrs. Alexander M. Campbell, Grand Rapids, have sailed for Europe.——Dr. Johnson B. Kennedy, president of the Detroit Board of Health has been appointed consulting surgeon to Grace Hospital.——Dr. William H. McEwen, St. Charles, is reported to be ill at his home with heart disease.——Dr. Angus McLean has been appointed a member of the Detroit Board of Health.——Dr. Harold L. Hurley, house physician at the Jackson City Hospital, has resigned and will practice in Jackson.

NEW YORK

Personal.—Dr. B. C. Loveland, Syracuse, was operated on for appendicitis at the Hospital of the Good Shepherd, February 24, and is reported to be doing well.——Prof. C. E. A. Winslow has been appointed advisory expert of public health education by the state commission of health.——Dr. William A. Howe, Phelps, has retired as deputy commissioner of health of the state.

Alien Insane Bill Signed.—The Blauvelt bill which gives the governor the power to appoint a commission to endeavor to obtain federal legislation which will relieve New York state from the care of the alien insane was signed by Governor Glynn on February 19. The governor has appointed Senators Blauvelt and Brown and Dr. Spencer L. Dawes, Albany, as members of this commission. It is estimated that the desired legislation would save the state about $3,000,000 a year.

Illness at Cornell.—Dr. S. A. Mumford, medical advisor of the University, states that 41 per cent. of the illness at Cornell University is caused by common colds, and that these illnesses cost the University $30,000 a year. Physicians of the University are sending an appeal to each student, with the request that as soon as he feels a cold coming on, he shall report it to the medical officers, who have provided printed blanks to be filled out with data concerning the cause, course, treatment, etc.

Welfare Work of New York Telephone Company.—The New York Telephone Company, which earned four medals in this country and abroad for welfare work among its employees, has engaged Lieut. Matthew J. Shields, M. R. C., U. S. Army, to deliver a series of lectures to its employees on accident prevention and first aid to the injured. Their reason for this step is that no matter how many safeguards, safety devices and rules are made only a very small portion of accidents may be prevented without the cooperation of the workers themselves.

Operations on Tonsils.—At the recent meeting of the New York Academy of Medicine, the public health, hospital and budget committee adopted the following resolutions:

> *Resolved,* That it is the sense of this Committee that all operations on the tonsils should be performed in hospitals or in such dispensaries as are provided with operating rooms and with recovery ward facilities.
>
> *Resolved,* That private hospitals of the city be requested to cooperate with the Health Department of the city in the operative care of children with enlarged tonsils and adenoids; that these hospitals provide proper and adequate facilities for such cases and that the city compensate the hospitals for this special service; and, further, that the public hospitals be requested to provide similar facilities, without special compensation.

Personal.—Col. Sir William B. Leishman, honorary physician to King George V, arrived in New York on the *Carmania,* February 24.——Dr. Hillis Cole has retired from the direction of the division of publicity and education.——Dr. F. C. McClendon, formerly of the faculty of Cornell University, has resigned to accept a similar position with the University of Minnesota.——A dinner was given Dr. Annie S. Daniel, February 19, by the women physicians of New York, in commemoration of her thirty-five years of work among the poor of the East Side of the city.——Dr. Stephen Smith celebrated his ninety-first birthday anniversary, February 19, and was given a dinner by his associates of New York City in honor thereof.

Opposition to Boylan Bill.—This bill which provides a new section of the public health law to regulate the sale of habit-forming drugs is opposed by wholesale and retail druggists and by societies whose aim it is to stamp out the use of these drugs. Dr. Lewis K. Neff opposed the provision that a physician cannot prescribe a habit-forming drug longer than three weeks, declaring it to be a handicap to a physician having a patient with an incurable disease where the use of such a drug is advisable, as consultation with other physicians would entail additional expense. The Society for the Prevention of Crime objected to the bill because it defines the habit-forming drugs, thus limiting the number of cases that may be taken up. New drugs not mentioned in the bill might be invented at any time, permitting those who desire the drugs to get the effects sought by their use.

Oppose Bichlorid Law.—The wholesale and retail druggists of New York have filed a protest with the Board of Health against the ordinance which is to go into effect March 1 to safeguard the sale of bichlorid of mercury. The reason for this protest is that the wholesalers declare that the ordinance is unfair in that it compels the distribution of the drug in small containers, when it has hitherto been customary to dispense it in bulk packages. It is further contended that it is not fair to retailers, as it does not provide for selling bichlorid in the form of a powder. It is stated that this is necessary as the drug often forms part of a prescription. It is also contended that many manufacturing chemists cannot get the machinery to wrap each tablet separately within the short time limit that the ordinance allows. The Board of Health holds that these difficulties have been overcome in Germany and can be met here.

Small-Pox in Niagara Falls.—The January *Bulletin* of the New York State Board of Health dealing with small-pox in the state gives a history of the small-pox epidemic at Niagara Falls. The article sets forth the orders and communications issued and the measures taken to assist the local authorities in stamping out the epidemic in that city, which has been a center of strong antivaccination sentiment. The disease first appeared in the spring of 1912 and has existed practically continuously from that time to the present. It became epidemic in November, 1913, and up to the end of December there had occurred about 200 cases. There was a total of 823 cases in the state during 1913, only twenty of which occurred in New York City with more than half the population of the state. On February 24 the small-pox quarantine, which had been enforced for eight weeks, was removed. More than twenty thousand persons have been vaccinated, and there are now sixteen cases of small-pox under quarantine.

Sanitary Supervisors.—The Public Health Council of the State Health Department has prescribed the qualifications of sanitary supervisors and at the meeting of the Public Health Council on Jan. 21, 1913, it was agreed that sanitary supervisors should not be allowed to engage in the regular practice of medicine or in any regular occupation or business, except that they should be at liberty to accept other positions in public health work, such as local health officer, teacher of public health, etc., the State Department of Health retaining the power to determine at any time whether the extent of such work interfered with the proper performance of the duties of sanitary supervisor. It was agreed that the salary should be sufficient to enable competent men to devote their entire time to public health work and to look forward to it as their career. It was agreed that the salary should be $4,000 a year, this to include traveling expenses, the use of an automobile, etc. Details of the requirements will be sent by the department when requested.

NORTH CAROLINA

Fire in State Hospital.—Fire in the State Hospital for the Colored Insane, Goldsboro, February 21, destroyed property to the value of $6,000.

New Officers.—Caldwell County Medical Society, at Charlotte, recently: president, Dr. B. Gamewell Flowers, Granite Falls; secretary-treasurer, Dr. C. Banks McNairy, Lenoir

Personal.—Dr. John W. Wallace, Concord, has returned from a stay of several weeks in the East.——Dr. E. Cooper Person, Pikeville, fractured his arm and nose and sustained other severe injuries in a runaway accident, February 19.——Dr. C. Banks McNairy, Lenoir, has been elected superintendent by the trustees of the North Carolina State School for the Feeble-Minded, to succeed Dr. Ira M. Hardy, Washington.

Hospital Staff Announced.—The Merriwether Memorial Hospital and Training School, Asheville, announces the following staff: dean, Dr. Charles B. Ambler; vice-dean, Dr. Eugene B. Glenn; secretary, Dr. William J. Hunnicutt. The following division officers were elected: medicine, Drs. Chase P. Ambler, Martin L. Stevens, C. E. Cotten and Arthur Reeves; neurology, Dr. Robert S. Carroll; gastro-enterology, Dr. Arthur W. Galloway; genito-urinary diseases, Dr. P. R. Terry; surgery, Dr. Eugene P. Glenn and Dr. F. Webb Griffith; dermatology, Dr. D. William Brownson; pediatrics. Dr. Lewis W. Elias; diseases of the eye, ear, nose and throat, Drs. Edgar R. Russell, Joseph B. Green and Rufus G. Buckner.

Mental Hygienists Elect Officers.—The North Carolina Society of Mental Hygiene, recently organized at Raleigh at the instance of Dr. Albert Anderson, superintendent of the State Hospital for the Insane, has elected the following officers: president, Mr. W. A. Erwin; vice-presidents, Drs. Ernest S. Bullick, Wilmington, and Lewis B. McBrayer, Asheville, and Miss Daisy Denson, Raleigh; secretary, Dr. Albert Anderson, Raleigh (reelected); treasurer, Mr. Joseph G. Brown, Raleigh, and executive committee, Drs. William W. Faison, Goldsboro, John McCampbell, Morgantown, and Mr. Clarence Poe, Raleigh. The purpose of the organization is "to urge a vigorous campaign for education along lines of mental hygiene in all parts of the state, with a view to bringing about a system of prevention of insanity."

OHIO

Personal.—Dr. John J. Kinney, Wooster, has returned from abroad.——Dr. Harrison T. Lee, Athens, fractured his right arm while cranking his motor-car, February 24.——Dr. Thomas J. Dillinger, Murray, is critically ill at his home as a result of a cerebral hemorrhage, February 21.

Health Officers Association Organized.—The Miami Valley Health Officers' Association was organized in Dayton, February 17, by the health officers of Springfield, Hamilton, Middletown, Miamisburg, Dayton, Troy, Piqua and Xenia. Dr. Asa C. Messenger, Xenia, was elected president, and Dr. Alvin L. Light, Dayton, secretary-treasurer.

Cincinnati

Society Proceedings.—The University Medical Society met at the Sinton, February 25, and elected the following officers for the ensuing year: Dr. Howard Schriver, president; Dr. William J. Topmoeller, secretary; Dr. Wade Heiser, treasurer. This society has been but lately organized, and its membership is confined to graduates of the College of Medicine in 1910 and thereafter. Several interesting papers were submitted.

City Hospital.—After a very spirited debate on the part of the members present, provisions creating a department in control of the new City Hospital, and prescribing a method by which the referendum may be invoked were adopted by the Charter Commission at its session held Monday, February 23. The report submitted by the Joint Committee of Social Welfare and General Administration provided for seven members on the board, consisting of the following: The dean of the medical department of the university, the director of the department of social welfare, the health officer, one person confirmed by the mayor after selection by the board of trustees of the University of Cincinnati, and three citizens to be selected by the mayor. Each of the last four members shall serve for a term of six years. In making first appointments, the mayor shall confirm selection of university trustees for a term of six years. The board is to have power to appoint superintendents and have control of finances and business administration of hospitals. The selection of the staff will be dependent on nominations made by the trustees of the university, these selections being made in much the same way and with the same degree of care as is used in the other academic selections. This same hospital board also has been given the control of the branch hospital.

Cleveland

Control of Vice.—The Ministerial Association of Cleveland is endeavoring to influence city officials to discontinue the segregated "red-light" district. Detectives employed by the association counted from 1,500 to 2,500 men and boys visiting the district nightly. Just recently the limits of the "area" were ordered lessened but it is questionable to physicians whether it should be entirely discontinued.

Hospital Notes.—Under the articles of agreement entered into between the city of Cleveland and the trustees of the Western Reserve University the professional work of the Cleveland City Hospital is to be entirely under the supervision of a staff nominated by that school. The visiting men will be grouped under two divisions, namely, medical and surgical, each in charge of a division chief. As already announced, Dr. Carl A. Hamann will head the surgical division and Dr. Edward Perkins Carter the medical; the latter giving his entire time to the direction of his division and teaching. Under the division of surgery will be grouped the departments of general surgery, genito-urinary diseases, nose, ear and throat, eye and obstetrics—each with its own chief; while under medicine are the departments of general medicine, neurology, dermatology and pediatrics, likewise with their separate heads. The hospital, in addition to very broad social service ideals, is to be made essentially a teaching and research hospital. In October the clinical clerk service is to be instituted on the wards for the seniors of the medical department of Western Reserve, as has already been done on the open wards of the Lakeside Hospital.——The Cleveland-Pulte Homeopathic Medical School has heretofore had a service at the hospital; every fourth patient being assigned to them. Under the articles of agreement this service is now to be discontinued, though the homeopathic school will be allowed to teach their students there for the remainder of this school year.——Under the new group plan of the City Hospital, calling for twenty-two buildings, the Contagious Hospital of 100 beds is already done and in operation; while the new Nurses' Home, Administration, Service and Laundry buildings are now under construction and will be finished very soon.——The superintendent of the City Hospital announces that within six months 150 additional beds will be opened up for the exclusive treatment of acute cases of gonorrhea and syphilis. This new departure in this country will fill a greatly needed want for the city of Cleveland and will be watched with great interest by medical men and educators.——St. Luke's Hospital is planning a campaign in the spring to raise $400,000 with which to cancel debts, build a nurses' home, children's and nurses' pavilion. It is also planned to enlarge the outpatient department, wards and low priced rooms. It is the intention to provide adequate accommodations for physicians and surgeons not on the staff. Remodeled the hospital will accommodate 300 patients.——The St. Vincent's Charity Hospital is planning to break ground for their new wing this spring.

PENNSYLVANIA

Personal.—Drs. Charles E. Hannan and Harry W. Salus, Johnstown, have been elected members of the Mercy Hospital staff.——Dr. Watson Marshall, Pittsburgh, has been appointed demonstrator of laryngology in the University of Pittsburgh School of Medicine.

Health Lectures.—The third of the series of health lectures under the auspices of the Alleghany County Medical Society will be delivered at the East Library Branch of the Y. M. C. A., March 10, by Dr. Isidore H. Alexander, New York City, on Tuberculosis, illustrated with stereopticon views.

Medical Club to Be Formed.—At the meeting of the Williamsport Medical Association, held February 19, in conjunction with the Lycoming County Medical Society, it was decided to form a medical club, which will have set aside for its use a room in the University Club to be used as a library and reading-room.

Medical School Banquet.—The first annual banquet of the School of Medicine of the University of Pittsburgh, was held February 25. The banquet was in charge of the student senate of the medical school, and was attended by both school and faculty members. Mr. J. H. Wagner, president of the student senate, officiated as toastmaster.

Philadelphia

University Receives Two Portraits.—"University Day," the Washington Birthday celebration of the University of Pennsylvania, February 23, was made notable by the gift to the medical school of the portrait, by H. H. Beckinridge, of the late Dr. John H. Musser, and of the portrait by Elsa Koenig Nitsche of the deceased Dr. Rush Shippen Huidekoper.

University Alumni Banquet.—The twenty-second annual dinner of the Philadelphia Alumni Society of the medical department of the University of Pennsylvania, was held at the Bourse, February 21. At the business meeting preceding the dinner the following officers were elected: President, Dr. William A. Hughes; secretary, Dr. William S. Wray.

Rush Society Lecture.—The seventh Rush Society lecture will be given March 11, in lecture room D of the new Medical Laboratory of the University, Thirty-Sixth and Spruce Streets. Dr. John Howland of Johns Hopkins Hospital, Baltimore, will speak on "A Consideration of Certain Aspects of Rachitis." This will also be the annual address before the Alpha Omega Alpha fraternity.

Small-Pox Cases Cause Wholesale Vaccination.—Since February 25, three sections of the city have been roped off and more than 4,000 persons have been vaccinated. Two of these quarantined districts were in the northwestern portion of the city and the third near Twenty-First and Bainbridge. The disease is believed to have been imported from Baltimore, so that every incoming boat from that city is detained at Marcus Hook and all passengers are examined

Personal.—Fire damaged the house of Dr. Frank E. Freeman to the extent of $1,200, February 20.——Dr. Albert E. Blackburn has been reappointed a member of the State Board of Examiners for registration of nurses.——Dr. Alfred C. Marshall has resigned as assistant medical inspector of the Bureau of Health.——Dr. George de Schweinitz had the honorary degree of LL.D. conferred on him by the University of Pennsylvania at the "University Day" exercises, February 23.

TENNESSEE

Personal.—The office of Dr. Bailey P. Lester, Woodbury, was destroyed by fire January 23.——Dr. James C. Hunt, Nashville, is reported to be critically ill.

Chicago Surgeon at Nashville.—Dr. Daniel H. Williams, Chicago, conducted the annual surgical clinic at Meharry College, Nashville, last month. Dr. Williams was elected to honorary membership on the Nashville negro Board of Trade. At Rock City Academy of Medicine, Dr. Williams delivered an address on "Preparation and Postoperative Treatment."

New Officers.—Giles County Medical Society at Pulaski, January 28: president, Dr. James K. Blackburn; secretary, Dr. Eunice C. Freeman, both of Pulaski.——Williamson County Medical Society at Dover, January 22: president, Dr. Cyrus N. Keatts; secretary, Dr. John B. Lahiff, both of Indian Mound.——Knoxville Surgical and Gynecological Society, January 22: president, Dr. Charles M. Drake; secretary-treasurer, Dr. P. Herbert Acuff (reelected).——Sumner County Medical Society at Gallatin, February 18: president, Dr. Edward Bethpage Wright; secretary-treasurer, Dr. Walter S. Dotson, Gallatin.

In Honor of Veteran Physicians.—Dr. Gustavus B. Thornton, Memphis, was given a handsome gold-headed cane and a shower of flowers by his professional friends, February 1, on the occasion of his seventy-ninth birthday anniversary.——On February 5, Dr. Richard Brook Maury was given a dinner in celebration of his eightieth birthday by forty brother physicians, at which he was presented with a silver loving-cup and an elaborate birthday cake. Dr. Frank Jones presided as toastmaster. Dr. Gustavus B. Thornton spoke on "Dr. Maury the Physician," Dr. Benjamin F. Turner on "Dr. Maury as a Teacher," Bolton Smith on "Dr. Maury the Citizen," and Bishop Gaylor on "Dr. Maury the Churchman."

SOUTH CAROLINA

Personal.—The office and drug-store of Dr. David S. Keisler, Ward, were destroyed by fire, February 2, with a loss of about $2,500.

Pellagra in the State Asylum.—According to the annual report of Superintendent J. W. Babcock, of the State Hospital for the Insane, during the years 1907-1913, more than 900 cases of pellagra were received at the hospital. During 1913, 165 patients died in the institution as the result of the disease.

Will Not Admit Low Grade Graduates.—The Board of Medical Examiners in 1913 passed a resolution to the effect that after July 1, 1914, South Carolina will not admit to its examinations graduates of colleges rated lower than Class B by the Council on Medical Education of the American Medical Association.

GENERAL

New England Alumni of Vermont University.—The twenty-second annual dinner of the New England Alumni Association of the University of Vermont, was held in Boston recently. Dr. Frank H. Clapp, North Grafton, Mass., was elected president, and Dr. Peer P. Johnson, Beverly, Mass., vice-president. Dr. Walter J. Dodd, Boston, is a member of the executive committee.

Federation of Medical Boards Meeting.—The second annual meeting of the State Medical Boards of the United States was held in Chicago, February 25. The following officers were elected: President, Dr. Charles H. Cook, Natick, Mass.; vice-president, Dr. T. Addison McCann, Dayton, Ohio; secretary-treasurer, Dr. Oscar C. Huffman, Albany, N. Y., and executive committee, Drs. John M. Baldy, Philadelphia; Herbert Harlan, Baltimore; Walter L. Bierring.

Medical College Association Meeting.—The Association of American Medical Colleges held its twenty-fourth annual meeting in Chicago, February 25. The following officers were elected: President, Dr. Isidore M. Dyer, Tulane University, New Orleans; vice-president, Dr. Charles R. Bardeen, University of Wisconsin, Madison; secretary-treasurer, Dr. Fred C. Zapffe, Chicago (reelected), and executive committee, Drs. William J. Means, Starling Medical College, Columbus; Randolph Winslow, University of Maryland, Baltimore; Egbert Le Fevre, University and Bellevue Hospital Medical College, New York City.

Fourth Congress of International Society of Surgery.—The Fourth International Congress of Surgery will be held in New York from April 13 to 16, 1914. The meeting will be opened at the Hotel Astor, by the President of the United States April 13, at 11:30 a. m., and the scientific proceedings will begin at 2:30 p. m. the same day. In addition to the papers to be read at the congress operative demonstrations will be given in the different hospitals. The society now numbers about 600 members. Only members will be allowed to participate in the discussions, but the meetings will be open to non-members. Professor Depage of Brussels is secretary.

Bequests and Donations.—The following bequests and donations have recently been announced:

Coburg, Ont., Hospital, donations of $10,000 from Mr. Harry Black, New York City, and $20,000 from Mr. John Helm, Port Hope, Ont.

St. Luke's Hospital, New York City, $10,000 for the endowment of a free bed for destitute physicians and surgeons. St. Mark's Hospital, $1,000; St. Mary's Hospital for Children, $1,000; College of Physicians and Surgeons, New York City, $1,000; New York Academy of Medicine, a portrait of her father, Dr. Thomas C. Cock, by the will of Mrs. Augusta Cock Chapin. Two trusts of $10,000 and $5,000 left to friends during their lifetime, to go after death to the New York Infant Asylum, and the New York Infirmary for Women and Children.

Seton Hospital, Spuyten Duyvil, the bulk of the estate of Charlotte Scarabin.

Chicago Home for Jewish Orphans and Associated Jewish Charities, each $5,000, by the will of Julie Wedeles.

Winnebago County Isolation Hospital, Rockford, a donation of $6,000 from Ralph Emerson, to be used with a similar amount raised by the Winnebago County Board for the immediate erection of an isolation hospital.

Samuel D. Gross Prize.—The committee having in charge the Samuel D. Gross prize, valued at $1,500, of the Philadelphia Academy of Surgery, announces essays in competition for the prize will be received until Jan. 1, 1915.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded on original investigations, the candidates for the prize to be American citizens." It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page, it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery [illegible] of the College of Physicians, 19 S. 22nd St., Phil[illegible] before Jan. 1, 1915. Each essay must [illegible] by a motto, and accompanied by a [illegible] same motto, containing the name and [illegible] writer. No envelope will be opened except that which [illegible]companies the successful essay. The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

CANADA

Personals.—Dr. Roger E. Webster, Ottawa, Ont., is visiting the hospitals in New York.——Colonel Sir William Boog Leishman delivered an address on "Typhoid Inoculation" before a special meeting of the Toronto Academy of Medicine, March 2. The previous week Sir William was a guest of the Montreal Medico-Chirurgical Society.——Dr. Robert Abbe, New York City, delivered an address before the Academy of Medicine, Toronto, March 3. Dr. Abbe was the guest of honor at a luncheon at the New York Club given by Dr. William H. B. Aikins.

Hospital News.—A new hospital, erected at a cost of $50,000, was opened at Coburg, Ont., on February 26.——St. Paul's and Alexandra Contagious Disease hospitals, Montreal, admitted 2,265 patients during 1913. There were 2,001 discharges and 204 deaths. The city gives $1 per patient per day to each hospital.——It is proposed to add to the Vancouver General Hospital a maternity hospital, an infectious disease building and new administration quarters at a cost of $700,000. As quite 50 per cent. of the patients come from points in British Columbia outside the city, the government is being asked for a grant of $250,000. More than a million dollars has already been spent on this hospital of which the government only contributed $35,000.

American Bacteriologists Meet.—The Society of American Bacteriologists met in Montreal, Dec. 31, 1913, to January 2, under the presidency of Professor Winslow. As Montreal's water-supply was almost shut off at the time there were only brought together about one-half the numbers expected. There were present workers in the bacteriology of milk and water, agricultural bacteriologists and public health workers. The interest in the meeting settled around the paper read by Dr. N. S. Ferry, Detroit, relative to a coccus he has found in the throats of scarlet fever patients. He admitted, however, he had not been yet able to produce the disease by inoculation of a pure culture. A striking observation was the absence of infection among the nurses in the Detroit Contagious Diseases Hospital, since Dr. Ferry had started to vaccinate them two years ago with pure cultures of this organism, although when he was absent for a few months, and there was no vaccine supply, cases developed as usual.

Canadian Militia Medical Officers.—The seventh annual meeting of the Association of the Officers of the Medical Services of Canada was held in Ottawa, February 24 and 25. Members of the Army Medical Corps attended from all parts of the Dominion. H. R. H. the Duke of Connaught was the guest of honor at the annual banquet on the evening of the 24th and made the presentation of the silver cup, donated annually by Dr. George Sterling Ryerson, Toronto, to Major David B. Bentley, M.D., Sarnia, Ont., for the best field ambulance work during 1913. Lieut.-Col. John Taylor Fotheringham, Toronto, presided at the banquet. The following officers were elected: president, Lieut.-Col. Robert T. McDonald, Sutton, Que.; vice-president, Major George A. Campbell, Halifax; secretary, Major Theodore H. Leggett, Ottawa. Dr. G. Carleton Jones, director-general of the military forces of Canada, announced that the Hon. the minister of militia had raised the annual grant to the Association from $500 to $1,000.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 14, 1914.

Mr. Lloyd-George on the Insurance Act

Mr. Lloyd-George's chief medical adviser in connection with the insurance act has been Dr. Christopher Addison, an eminent anatomist formerly lecturer at St. Bartholomew's Hospital, who abandoned science for politics and is now a member of Parliament. At a complimentary dinner to Dr. Addison organized by members of the medical profession, Mr. Lloyd-George presided. In proposing the health of the guest he said that there were now on the panel 20,000 out of the 22,500 physicians in general practice in Great Britain. The government had distributed among them $20,500,000, an average of $1,150 for each physician. In addition $5,000,000 had been spent on drugs. All this was for barely one-third of the population. Assuming that the physicians were paid at the same rate for the rest of the population—and he was informed that they would be paid very much better—the average physician would receive $5,000 a year. Undoubtedly the insurance act had raised the level of the remuneration of the profession. He asserted that the average income of physicians had been increased by from $750 to $2,000 a year. He admitted that the act meant more work for physicians, but as in every other profession, they no doubt did not object to that as they received more pay. On the other hand, the act was a good thing for the community, because previously there must have been millions of people who had no medical attendance at all. Mr. Lloyd-George then pointed out the statement made in a recent article in the *Times* entitled "The Revolt of the Junior Medical Officer: An Effect of the Insurance Act," that the position of physicians was so improved that assistants could be obtained only at prices that were ruinous, and that whereas the position of locum-tenens previously paid $10 or $15 a week, incumbents now received as much as $29 and $40. Yet a year ago the *Times* was printing articles in the same leaded type, with the same sensational headings, complaining that the act meant ruin for the medical profession, which would be dependent on public charity in another year!

Successful Search for a Tube of Radium by Means of the Electroscope

A tube of radium worth over $5,000 was presented to the Liverpool Royal Infirmary. It was used in the treatment of a patient and fixed to his face in the ordinary manner by dressings and left in position all night. When a member of the staff arrived in the morning, he found that the tube was missing. The theory that the patient might have swallowed it was abandoned after a careful search with the Roentgen rays. It was then suggested that the tube might have fallen out and been removed with the sweepings from the floor of the ward. The cart which contained these sweepings was about to leave the infirmary, and orders were given for it to remain. The services of Wilberforce, the physicist of Liverpool University, were requisitioned. When he arrived he placed his electroscope on the edge of the cart, and as a result was able to state that the radium was there. As it was then growing dark the search was discontinued until the following morning, the cart in the meantime being strictly guarded. The search was resumed next day by Wilberforce and the infirmary officials. Dr. Holland, roentgenologist of the infirmary, got into the cart and emptied it of the rubbish, which was placed in buckets. When the twelfth bucket had been handed to Wilberforce he discovered in it the missing tube, which was deposited in safe keeping in the Roentgen-ray department.

The Royal Commission on Venereal Diseases

At the twelfth meeting of the Royal Commission on Venereal Diseases, Dr. J. Kerr Love, aural surgeon to the Royal Infirmary, Glasgow, and to the National Bureau for the Deaf, gave evidence, which dealt largely with syphilis as a cause of deafness in children. This syphilitic deafness he regarded as essentially a disease due to untreated syphilis among the poor. He considered that 25 per cent. of the cases of congenital deafness were due to syphilis and that this form of deafness was hardly ever cured. By treatment the health of the children might be improved, but restoration of hearing was rarely possible. The cost of education in a deaf child was at least five times as great as in a normal child. He illustrated the effect of syphilis on child life by showing a number of syphilitic family trees. A record of twenty-one families showed that two-thirds of the children born were born dead, or if alive were blind or deaf or both. He considered that improved treatment of syphilis was urgently demanded and should be placed within the reach of all. Some form of notification of the disease he thought desirable, but universal and compulsory notification was not at present feasible. It might, however, be prudent to attack syphilis by a flank movement and to notify certain conditions which are often due to congenital syphilis, following up the information by the Wassermann reaction or any other test that might indicate its presence.

At the thirteenth meeting Major W. S. Harrison, pathologist to the Royal Military Hospital, Rochester Row, gave evidence. He considered that the chief cause of the late manifestations of syphilis was inadequate treatment. Since the treatment of syphilis in the army had been systematized, malignant syphilis had become almost unknown. Adequate treatment should be commenced at the earliest possible stage after the establishment of the diagnosis, and should include prolonged observation clinically and by all laboratory tests. In consequence of recent tests the diagnosis of syphilis, which formerly had been difficult, had now become as exact as that of almost any other disease. It was very important that both the profession and the public should be educated with regard to venereal diseases, and that unqualified persons should be prevented from treating these diseases. He advocated a system of confidential notification at the option of the local authority. In view of the importance of providing facilities for diagnosis and in order to secure early treatment he thought that district and county laboratories should be established under the control of a central national laboratory.

Tuning-Forks in Diagnosis

Mr. James Cantlie, the well-known surgeon and specialist in tropical medicine, has recently pointed out that if a tuning-fork be set vibrating and the shaft placed against the body wall and moved about, a note varying with the density of the organ immediately beneath will be transmitted to a stethoscope. In this way he finds that the limits of the liver can be gaged almost to a hair's breadth. The fork used has a specially designed "striker" attachment so that it need not be removed from position for the purpose of revibrating. He has found this method very useful in cases of small localized pleurisy situated low down in the chest which by ordinary methods cannot easily be differentiated from abscess of the liver or a liver pushed upward by abdominal distention. He compared the results with those obtained by roentgenoscopy and found that they were absolutely accurate. He believes that the method will prove of advantage in diagnosing broken bones. He has further found that different tones are specific to different affections of the liver. Thus a fatty liver gives out tones different from those of cirrhosis. In a letter to the *Lancet*, Dr. Seymour Taylor points out that the use of the tuning-fork is not a new idea. He has used it for years in exploring the chest. The idea was first suggested to him in the eighties of the last century by the lectures of the late Dr. Stone. Dr. Taylor finds a tuning-fork specially advantageous in marking out lung cavities or dilated tubes, but even in these conditions certain physical factors such as the presence of much fluid or pus will lessen the diagnostic aid of the fork. When a cavity is dry the reverberation of the dominant note is distinctly increased over the cavity, and is diminished as the instrument is carried away from the lesion. Again, in men with hard, almost solid ribs, the sounds are better conducted, as one would expect, than in children and young persons with more elastic ribs, which are not such good conductors.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Feb. 13, 1914.

Birth Mortality in French Cities

In the attempt to combat the causes of the decrease in population, attention has been directed for several years especially to infant mortality. While it is true that the high death-rate of young infants is one of the chief factors in this decrease, it is one which can easily be corrected by proper precautions. Another factor, which is of somewhat less importance, is the birth mortality. It seems to have escaped notice until Dr. Chambrelent, professor agrégé at the Faculté de médecine de Bordeaux, recently published in the *Revue philanthropique* the results of an interesting research.

Chambrelent divided the cities of France into four sections according to population: first, Paris, with its 2,714,068 inhabitants; second, large cities with more than 100,000 population; third, medium-sized cities between 30,000 and 100,000, and fourth, small cities of from 5,000 to 30,000. He was able to establish the fact that the birth mortality per thousand inhabitants is greater in Paris than anywhere else. It is considerably greater in the large towns than in the medium-sized, and much greater than in the small towns. Another consideration was the annual variation in the birth-rates of the towns studied. If the number of births decreases, it is obvious that the birth mortality will be influenced by this decrease. In order that the results might not be vitiated by this consideration, Chambrelent determined the relation between the number of children born dead and those which, during the same period of time, had been registered as born alive. Here again it was shown that in the decade from 1896 to 1905, the period studied, the coefficient of birth mortality, that is to say, the proportion of the number of children born dead to those born alive, was much larger for Paris, diminishing as before according to the size of the town. Another thing which the investigation brought out was that the coefficient of birth mortality remains nearly constant for each group of towns, varying but slightly from year to year.

In France children are registered as having been born dead if they die before the time when they are registered. As the law permits a delay of three days between the time of birth and the time of registration, the number of the still-born is added to the number of children who die during delivery or afterward up to the time of registration. It would be desirable for the distinction to be made in registering between children actually born dead and those who die later. This is the custom in some other countries, as in Belgium and Italy.

For Widows and Orphans of Military Surgeons

The Chamber of Deputies, without discussion, and after declaring that the measure was urgent, has passed a bill for the relief of the widows and orphans of surgeons and hospital attendants in the health service of the army, the navy and the colonies. The same pensions or other assistance will be given as would be given had the death happened in war, if death results from an epidemic or contagious disease contracted in the service, whether from patients being attended or from laboratory work.

Campaign Against Dirt

At its last meeting the Société de médecine publique et de génie sanitaire adopted a resolution against the exposure of goods for sale on the streets. This will be brought to the attention of the proper authorities in an attempt gradually to stop the practice. Among the reasons for condemning the practice are the following: Safety of pedestrians, who are obliged to use the sidewalk more than ever since the increase in motor traffic; exposure to the weather of the clerks who tend the stands; contamination of exposed foods by dirt. The society of public medicine and sanitary engineering lays special stress on the last two points.

Public First Aid in 1913

Professor Thoinet, for the Conseil d'hygiène, has reported to the prefect of police of Paris the work by the *secours publics* during 1913. At the posts along the Seine and canals 360 persons rescued from the water were received, 254 men and 106 women. Of these, 168 jumped into the water purposely, and only five were dead from having been immersed too long. In the different medical stations in Paris 428 wounded or sick persons were treated. On holidays or special occasions 492 persons were treated. Of these casualties 140 occurred July 14, 110 on the mi-carême, 44 on the day of the running of the Grand Prix, and 37 on mardi gras.

Free Pure-Food Tests

The municipal laboratory of Paris has established the first of the contemplated stations for free tests at different parts of the town, beginning with the populous suburbs. The analyses will be made in the morning, when marketing is being done by housekeepers, and will be carried on for only an hour or two.

Death of Dr. Pichevin

Dr. Pichevin, formerly chief of the gynecologic clinic of the hôpital Necker and the Hôtel-Dieu, and founder of the *Semaine gynécologique*, is dead at the age of 56.

Marriages

Joseph R. Morrow, M.D., Belleville, N. J., to Miss Mayme W. Webster of Woodstock, Ont., in New York City, February 14.

Edwin Willis Breyfogle, M.D. Chillicothe, Ohio, to Miss Madge Putnam of Franklin, Ky., at Chillicothe, February 12.

Alvah R. Thompson, M.D., to Miss Flora Carolyn Pirkle, both of Buckhead, Ga., at Marietta, Ga., February 19.

Harry Mortimer Archer, M.D., New York City, to Miss Emilie June Walker of Brooklyn, N. Y., February 17.

Charles Raphael Chesnutt, M.D., Little Rock, Ark., to Miss Helen John Christy of St. Louis, February 24.

Arthur L. Browning, M.D., to Miss Mary Bowden, both of Hermon, Ill., at Quincy, Ill., February 11.

Bernard Lee Kahn, M.D., Philadelphia, to Miss Alice Michelsohn of Belmar, N. J., January 25.

George Frank Greenleaf, M.D., to Miss Estella Fuquay, both of Evansville, Ind., February 21.

George W. Harding, M.D., Warsaw, Ind., to Miss Ruby Henry of Wabash, Ind., February 16.

John P. Hiebert, M.D., Altona, Man., to Miss Myrtle Jeffers of Windom, Minn., February 21.

George Safley Muirhead, M.D., Marion, Iowa, to Miss Huntington, recently.

Deaths

William Wallace Stevens, M.D. University Medical College of Kansas City, Mo., 1901; a Fellow of the American Medical Association; at one time assistant police surgeon of Kansas City; was crushed beneath his overturned motor-car near Independence, Mo., February 19, and died a few minutes later from his injuries; aged 33. The funeral services were conducted by the Jackson County Medical Association, and both honorary and active pall-bearers were physicians of Kansas City.

Thaddeus W. Clark, M.D. University of Maryland, Baltimore, 1880; demonstrator of physiology and chief of clinic of nervous diseases in his Alma Mater; assistant surgeon of the Fifth Maryland Infantry, U. S. V., during the Spanish-American War; formerly assistant quarantine physician of Baltimore; died at the home of his brother-in-law in Baltimore, February 14, from disease of the throat of long standing, aged 62.

Whitmore Snively, M.D. College of Physicians and Surgeons, New York City, 1866; a Fellow of the American Medical Association; professor of practice of medicine and clinical medicine in the Western Pennsylvania Medical College, Pittsburgh; for many years a member of the staff of the West Pennsylvania Hospital; died at his home in East End, Pittsburgh, February 15, from uremia, aged 69.

William Edson Apple, M.D. Jefferson Medical College, 1893; acting assistant surgeon, U. S. Army, with service in Porto Rico and in China during the Boxer campaign; a member of the Association of Military Surgeons of the United States; assistant medical inspector of the Bureau of Health of Philadelphia; died in the Episcopal Hospital in that city, February 15, from septicemia, aged 36.

James Flournoy Beck, M.D. University of Minnesota, College of Homeopathic Medicine and Surgery, Minneapolis, 1896; a Fellow of the American Medical Association; a member of the medical staff of the Minneapolis City Hospital; state medical examiner for the A. O. U. W.; died at his home, February 21, from ptomain poisoning, aged 41.

Benjamin W. Holliday, M.D. Western Reserve University, Cleveland, 1869; a Fellow of the American Medical Association; for seven years professor of anatomy in his Alma Mater; from 1878 to 1885 physician to the Cleveland Infirmary; a member of the staff of Charity Hospital, Cleveland; died at his home, February 18, from cerebral hemorrhage, aged 66.

Edward Robert Holliday, M.D. College of Physicians and Surgeons, Chicago, 1893; a Fellow of the American Medical Association; for one year assistant superintendent of the State Home for the Feeble-Minded, Chippewa Falls, Wis.; died at his home in Ellsworth, Wis., February 17, aged 48.

Lazarus Schoney, M.D. University of Pennsylvania, Philadelphia, 1864; acting assistant surgeon, U. S. Army, during the Civil War; for several years professor of pathology and clinical microscopy in the New York Eclectic Medical College; died at his home on Coney Island, N. Y., February 17, aged 75.

James McDowell, M.D. Kentucky School of Medicine, Louisville, 1854; a Confederate veteran; for many years a practitioner of Jefferson County; and for one term coroner of Bullitt County; died in the State Confederate Home, Pewee Valley, Ky., February 15, from senile debility, aged 89.

Heber McKendry Harvey, M.D. Bellevue Hospital Medical College, 1867; a member of the Medical Society of the District of Columbia; for several years physician of Vanderburg County, Ind.; died at his home in Washington, D. C., February 19, from locomotor ataxia, aged 74.

Brainerd Winslow Dearborn, M.D. Medical School of Maine, Brunswick, 1867; a member of the Minnesota State Medical Association; for ten years a member of the staff of the Swedish Hospital, Minneapolis; died in that institution, February 19, from angina pectoris, aged 74.

Silas W. Hadden, (license, eight years of practice, Michigan, 1900). A practitioner since 1868; a veteran of the Civil War; for many years a resident of Marine City and Port Huron, Mich.; died at the home of his son in Kansas City, Mo., February 11, from senile debility, aged 79.

Stanley Howard MacGillvary, M.D. Bellevue Hospital Medical College, 1890; a Fellow of the American Medical Association; and for fifteen years a practitioner of Brooklyn; died in St. Mary's Hospital in that city, February 16, after an operation for appendicitis, aged 45.

John P. Egglestone (license, Michigan, 1900) a practitioner since 1878; formerly president of the village of Imlay City and postmaster; supervisor, and a member of the school board; recently reappointed postmaster; died at his home in Imlay City, February 19, aged 62.

Otis L. Schrock, M.D. Medical College of Indiana, Indianapolis, 1904; of Greentown, Ind.; aged 32; died in the Marion (Ind.) Hospital, February 17, from injuries received two days before in a collision between a sleigh which he was driving and an interurban car.

James Joseph Burns, M.D. University and Bellevue Hospital Medical College, 1902; a Fellow of the American Medical Association; a practitioner of the Bronx, New York City; died in St. Francis' Hospital, February 19, after an operation for appendicitis, aged 33.

William H. Beck, M.D. Cincinnati College of Medicine and Surgery, 1860; University of Michigan, Ann Arbor, 1861; major and surgeon of volunteers during the Civil War; died at his home in Hartsville, Ind., February 12, from senile debility, aged 87.

Thomas Jefferson Acker, M.D. Bellevue Hospital Medical College, 1865; a Fellow of the American Medical Association; for more than forty-four years a practitioner of Croton-on-Hudson, N. Y.; died at his home in that place, February 15, aged 76.

Susan Fisher Rose, M.D. Homeopathic Hospital College, Cleveland, 1875; of Meadville, Pa.; for ten years Supreme Medical Examiner of the Ladies of the Maccabees; died in the Meadville City Hospital, February 13, from cerebral hemorrhage.

William Seth Turner, M.D. Eclectic Medical Institute, Cincinnati, 1884; a Fellow of the American Medical Association; chief of staff of the Newark (Ohio) City Hospital; died at his home in Newark, February 12, from pneumonia, aged 53.

Howard R. Lowder, M.D. Indiana Medical College, Indianapolis, 1875; formerly a Fellow of the American Medical Association; a veteran of the Civil War; died at his home in Bloomfield, Ind., February 13, from heart disease, aged 69.

David Van Meter Wale, M.D. University of Louisville, 1875; an eye, ear, nose and throat specialist, of Carthage, Mo.; for forty-seven years a resident of Jasper County; died at his home, February 17, from bronchial pneumonia, aged 67.

David C. McMillen (license, examination, Ohio); a practitioner since 1857; assistant surgeon of the One Hundred and Sixty-Third Ohio Volunteer Infantry during the Civil War; died at his home in Mansfield, February 10, aged 81.

John Francis Lilley, M.D. Cooper Medical College, San Francisco, 1897; formerly of Alameda, Cal.; for two years a resident of Albuquerque, N. Mex.; died in Mexico City, February 6, a week after an operation for appendicitis, aged 44.

Albert H. Schmidt, M.D. Missouri Medical College, St. Louis, 1879; of Chicago; formerly of Quincy, Ill.; died in the Monroe Street Hospital, Chicago, February 13, from injuries received in a street-car accident a short time before, aged 55.

Winston Appleby, M.D. St. Louis college of Physicians and Surgeons, 1892; for several years health officer of Bellingham, Wash., but for the last ten years a resident of Anacortes; died at his home in that city, February 16, aged 44.

James Swaze Watson, M.D. University of Michigan, Ann Arbor, 1881; a Fellow of the American Medical Association and a well-known practitioner of Aurora, Ill.; died at his home, February 12, from cerebral hemorrhage, aged 62.

Frank Alexander Sharp, M.D. Jefferson Medical College, 1872; for twenty-seven years physician to Moyamensing Prison, Philadelphia; died at his home in Philadelphia, February 18, from bronchial pneumonia, aged 59.

Benjamin F. Solliday, M.D. Jefferson Medical College, 1865; for many years a practitioner of Benton, Pa.; a veteran of the Civil War; died at the home of his son in Harrisburg, Pa., Dec. 25, 1913, from nephritis, aged 74.

Whitefield Otis Dunham, M.D. University of Maryland, Baltimore, 1891; founder of and surgeon to the Dunham Hospital, Sioux Falls, S. D.; died at his home in that city, February 18, from typhoid fever, aged 53.

Percival Barton, M.D., University of Pennsylvania, Philadelphia, 1849; surgeon of volunteers during the Civil War; formerly of Invergrove, Minn.; died at his home in St. Paul, February 22, from heart disease, aged 91.

Joseph Henry Billingsley, M.D. Pennsylvania Medical College, Gettysburg, 1856; a practitioner of Kentucky and Tennessee until 1882, when he moved to Florida; died at the home of his son in Ocala, February 5, aged 83.

Roscoe C. Sprague, M.D. University of Louisville (Ky.), 1910; of Liberty, N. Y.; for several years a surgeon on Transatlantic steamers; died at his home in Louisville, Ky., February 6, from heart disease, aged 26.

William Karbach, M.D. Eclectic Medical University, Kansas City, 1906; professor of general pathology in the Western Eclectic College of Medicine and surgery, Kansas City, Kan.; died at his home January 22, aged 51.

Geoffrey Strange Beck, M.D. Trinity Medical College, Toronto, Ont., 1881; M.R.C.S., Eng.; of Port Arthur, Ont.; died in Wellesley Hospital, Toronto, Ont., January 11, from arteriosclerosis and nephritis, aged 54.

Belle Page Pilcher, M.D. Eclectic Medical University, Kansas City, Mo., 1904; for several years superintendent of the Helen Lucelle Hospital, Winfield, Kan.; died at the home of her parents in that city, January 29.

Frank P. Wilson, M.D. University of Pennsylvania, Philadelphia, 1865; surgeon of the Fifteenth Pennsylvania Volunteer Infantry during the Civil War; died at his home in Toledo, Ohio, Dec. 28, 1913, aged 71.

Charles Lee Cook, M.D. University of Louisville. Ky., 1907; a member of the State Medical Association of Texas; died at his home in San Angelo, January 22, from pulmonary tuberculosis, aged 34.

Herbert F. Heilner, M.D. Hahnemann Medical College, Philadelphia, 1887; one of the founders and chief of staff of the Hahnemann Hospital, Scranton, Pa.; died in that institution, February 19, aged 60.

Levi D. Satterfield, M.D. Eclectic Medical Institute, Cincinnati, 1857; for many years a practitioner and prominent landowner of southern Kentucky; died in San Diego, Cal., February 11, aged 81.

Edmond Emanuel Kluttz, (license, North Carolina, 1885). A member of the Medical Society of the State of North Carolina; died at his home in Troutmans, February 16, from peritonitis, aged 58.

Thomas Peddie, M.D. Bellevue Hospital Medical College, 1876; for twenty-three years a medical inspector of the New York Board of Health; died at his home in New York City, January 20.

John Flaniken Wilson, M.D. Vanderbilt University, Nashville, Tenn., 1906; a Fellow of the American Medical Association; died at his home in Burlison, Tenn., February 10, from pneumonia.

Niles M. Miller, M.D. University of Pennsylvania, Philadelphia, 1881; Hahnemann Medical College, Philadelphia, 1882; of Philadelphia; died at Avon-by-the-Sea, N. J., January 6, aged 69.

Charles William Miller, M.D. New York University, New York City, 1879; of New York City; died at his summer home in West Falmouth, Cape Cod, Mass., about February 15, aged 56.

George A. Ireland, M.D. University of Nebraska, Lincoln, 1897; of Spring View, Neb.; aged 44; died at that place, February 8, from heart disease, while cranking his automobile.

Howard Beck Reed, M.D. College of Physicians and Surgeons, New York City, 1910; of Seabright, N. J.; died in the Neurological Institute, New York City, Dec. 27, 1913, aged 29.

William Penny, M.D. University of Louisville (Ky.), 1872; for many years in charge of the Penny Dispensary, Bay Ridge, L. I.; died at his home in Brooklyn, January 21, aged 83.

Ephraim Alfred Smedley, M.D. Miami Medical College, Cincinnati, 1883; of North Fairfield, Ohio; died in Mt. Dora, Fla., Dec. 25, 1913, from chronic interstitial nephritis, aged 55.

Ransom P. De Vore, M.D. Detroit (Mich.) Medical College, 1881; of Lyons, Mich.; died in the De Vore Sanitarium in that city, February 9, after a surgical operation, aged 64.

Lewis A. Snell, M.D. Chicago Homeopathic Medical College, 1886; of Charlotte, Mich.; died at the home of his daughter in Los Angeles, Cal., January 22, aged 72.

Felix Joseph Cloutier, M.D. Trinity Medical College, Toronto, 1889; one of the best-known French practitioners of Holyoke, Mass.; died at his home, January 19, aged 49.

Herbert M. Swaney, M.D. University of Pennsylvania, Philadelphia, 1885; of Grand Ledge, Mich.; died in New Hampshire about January 21, from cancer, aged 55.

John Allston Dent, M.D. Maryland Medical College, Baltimore, 1904; of Baltimore; died in the Maryland General Hospital in that city, February 1, aged 52.

Julia N. Moss McGowan, M.D. Northwestern University Medical School, Chicago, 1879; of Monterey, Cal.; died in Pacific Grove, Cal., in January, aged 72.

John Gephart, M.D. Rush Medical College, 1907; a member of the Kansas Medical Society; died at his home in McLouth, February 9, from typhoid fever, aged 33.

Andrew L. Johnson, M.D. Meharry Medical College, Nashville, Tenn., 1902; a colored practitioner of Macon, Ga.; died at his home about January 16, aged 36.

Cornelius Isaac Wainwright, M.D. University of Nebraska, Lincoln, 1905; of Giltner; died at his home in Giltner, Neb., January 13, from pneumonia, aged 33.

Lewis P. Motl, M.D. St. Louis University, 1911; died at his home in Waterloo, Wis., Dec. 26, 1913, from amyloid degeneration of the kidney, aged 28.

David Nelson Coon, M.D. U. S. Army Board, 1863; hospital steward during the Civil War; died at his home in Fort Madison, Iowa, January 18, aged 74.

Raphael G. Thralls, M.D. Indiana Medical College, Indianapolis, 1875; died at his home in Hymera, Ind., Dec. 19, 1913, from tumor of the face, aged 59.

Richard Daniel Fairex, M.D. St. Louis Eclectic Medical College, 1882; of New Orleans; died in Touro Infirmary in that city, January 18, aged 61.

Robert Bruce Baird, M.D. Detroit College of Medicine, 1878; died at his home in Marine City, Mich., November 25, from mastoid abscess, aged 57.

Mason Foshee, M.D. University of Virginia, Charlottesville, 1896; died at his home in Brewton, Ala., February 8, from pneumonia, aged 38.

Job Lee Gregory, M.D. University of Pennsylvania, Philadelphia, 1906; died at his home in Charleston, W. Va., January 30, aged 34.

Burrage Fowler Baker, (license, Wisconsin, 1904). A practitioner since 1881; died at his home in Milwaukee, January 23, aged 56.

Hiram W. Bowman, M.D. University of Wooster, Cleveland, Ohio, 1874; died at his home in St. Joe, Ind., about February 4, aged 64.

Charles T. Baker, M.D. University of Michigan, Ann Arbor, 1854; died at his home in Decatur, Mich., about January 13, aged 84.

John F. Bowman, M.D. Jefferson Medical College, 1865; died at his home in Millersburg, Pa., about January 15, aged 73.

F. B. Robinson, M.D., Edinburgh, Scotland; of Wells, Nev.; died in Reno, January 11, from acute myocarditis, aged 58.

Emerson W. Farrow, M.D. Jefferson Medical College, 1873; died at his home in Ashland, Pa., January 14, aged 67.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

AMORPHOUS PHOSPHORUS [*]

A Practically Inert Substance Introduced as a Valuable Therapeutic Agent

Amorphous phosphorus is a chemical anomaly contrasting markedly with ordinary phosphorus in its physical, chemical and pharmacologic properties. Ordinary phosphorus is soluble in certain solvents, such as oil; amorphous phosphorus is insoluble. Ordinary phosphorus is poisonous; amorphous phosphorus is not poisonous. Ordinary phosphorus has been regarded as of some therapeutic value; amorphous phosphorus, because of its insolubility and other physical properties, has never been so regarded. Pharmacologists, therefore, have paid very little attention to it. Some of them do not even mention it, though there are a few accounts of experimental work.

Noé,[1] in experiments on the action of phosphorus with yeast, found that yeast acted on ordinary phosphorus, producing PH_3 (hydrogen phosphid), but on amorphous phosphorus it had no action. His experiments show that amorphous phosphorus was not toxic to animals.

Thornton[2] quotes Reese as publishing a report of a case in which 30 grains of amorphous phosphorus were taken by a young woman with suicidal intent, but no toxic symptoms were manifested. Thornton found it non-toxic to animals.

Witthaus and Becker (Medical Jurisprudence, Forensic Medicine and Toxicology, iv, 635) say: "This form of phosphorus is practically non-poisonous, probably by reason of its insolubility. It has been administered to dogs to the extent of 200 gm. (nearly half a pound) in twelve days without causing poisoning."

C. D. F. Phillips (Materia Medica, Pharmacology and Therapeutics, Inorganic Substances, Ed. 3, p. 46) makes the following statement: "Amorphous phosphorus has been, by some observers, credited with physiologic activity. Thus, Bednar used it for a long period in small doses, and observed symptoms of excitation, trembling and clonic convulsions; but as much as 1 ounce has been given to dogs without perceptible effect. Thompson, in twelve carefully observed cases, found its action nil, and plausibly attributes its supposed powers to a slight admixture of ordinary phosphorus (*Pharm. Jour.*, 1875). I believe it is practically inert."

HOW INTRODUCED

The foregoing represents our scientific knowledge as to the action of amorphous phosphorus. Now, however, comes Dr. I. L. Nascher and introduces amorphous phosphorus as a remedy of remarkable value for the arteriosclerosis of old age. The method of introduction is somewhat peculiar. The treatment seems first to have been brought to notice through a printed slip sent to medical journals generally. This slip consisted of an extract from Nascher's book on old age, which at the time had not been published! Nascher also published an article on this subject in an obscure journal, the *American Practitioner*, for December, 1913. Neither the matter copied from his book nor the article referred to contain a single scientific fact that would warrant the claims made for it as a therapeutic agent. No record is given of animal experiments, and the clinical evidence presented certainly cannot be regarded as scientific.

As already stated, this form of phosphorus has not been previously used and has been regarded as without effect on the human system because of its insolubility in any of the liquids of the body. Nascher himself has not been able to find any new way to dissolve it. He says: "I made a number of experiments to find a solvent. The only substance which appears to dissolve it is serum; but I am still uncertain whether it is a solution or a very fine suspension. The phosphorus is precipitated in a few days, but the serum remains tinged." The fact that it separates from the serum on standing is quite conclusive evidence that it is insoluble in that liquid. Since no way of making it soluble has been discovered, there is no reason for expecting it to have any effect on the system. An insoluble and non-absorbable substance can produce no general systemic effect; if, when ingested, it produces any effect whatever, this effect must be local and will be shown by symptoms of gastro-intestinal disturbance. Nascher, however, took 15 grains, and no symptoms of gastro-intestinal disturbance followed. Hence, we must conclude that it is without effect on the gastro-intestinal mucous membrane. While Nascher records no experiments on animals, which is much to be regretted, he did experiment on himself and says:

"Ten grains produced a frontal headache, restlessness, excessive mental stimulation, ideas arising with such vividness as to appear as actual occurrences. There was a sense of weight or oppression in the stomach and priapism, the latter probably psychic, as I was looking for such a result. These symptoms passed away in a few hours."

Without doubt his explanations of the priapism can be applied to the whole experience; whatever symptoms there were, they were unquestionably psychic. The consideration of these subjective symptoms may be dismissed, since it is reasonable to assume that an insoluble, unabsorbable substance which produces no disturbance of the gastro-intestinal tract will have no effect on the rest of the organism.

Amorphous phosphorus did not produce such symptoms as Nascher relates in experiments similar to his made by us. The drug was taken in 10-grain doses by six different individuals. In no case did the symptoms described by Nascher follow; in fact, there were no symptoms whatever.

NASCHER'S THEORY

Nascher, after relating his subjective experiences and those of his patients, proceeds to build a theory to account for the unproved action of amorphous phosphorus in disease, especially in arteriosclerosis. It would have been more appropriate if before advancing the theory, he had made some experiments to prove that the substance has some action. But we give his theory as found in the quotation from his book, sent to medical journals, as already referred to. Here it is:

> "Amorphous Phosphorus in Senile Arteriosclerosis: The author has used the red amorphous phosphorus in senile arteriosclerosis for several years. Given originally as a substitute for ordinary phosphorus in senile debility, it was found that it was eliminated as amorphous phosphate of lime and that the lime elimination was thereby increased. Weil's experiments showed that the lime elimination in arteriosclerosis was diminished. Phosphorus has the property of combining with lime and increasing the lime assimilation. In the small doses which can be given when the ordinary phosphorus is employed, the phosphorus will combine with the lime of the food and increase the amount of lime-salts in the body. When given an amorphous phosphorus, the dose is 2 grains or more several time a day, and with a lime-free diet the lime required for the combination necessary to secure the elimination of the phosphorus excess is drawn from the abnormal lime deposits. This appears to be the rationale of the treatment and explains the good results obtained from its use. From 'Diseases of Old Age,' by I. L. Nascher, M.D., to be published shortly."

Thus, according to Nascher, the phosphorus, after being oxidized to phosphoric acid, catches the calcium and drags it out of the system! What are the facts? The human body contains a large store of phosphates which are excreted in the urine in combination with sodium and potassium—

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[*] The so-called amorphous phosphorus is in reality a crystalline body and is more correctly called red phosphorus to distinguish it from the ordinary or yellow phosphorus. It is the ordinary or yellow phosphorus which is official as "Phosphorus."

[1] Noé, J.: Action comparée du phosphore blanc et du phosphore rouge sur la matière vivante, Compt. rend. Soc. de biol., 1899, 105, i, 380.

[2] Thornton, E. Q.: The Advantages of Amorphous Phosphorus over the Official Form, Therap. Gaz., 1894, xxxv, 19. Tr. Pan. Am. Med. Congress, 1893, Washington, 1895, p. 1,438.

and yet these do not draw the calcium from the blood, brain and bones! To be blunt, Nascher's theory is absurd. The calcium in its various deposits in the body is already combined with phosphoric acid. Why should the phosphorus introduced take calcium from the phosphate radical with which it is already in combination? Nascher asserts that the phosphorus which is introduced as amorphous phosphorus is excreted as amorphous phosphate of lime within twenty-four hours. How does he know it is? It is, of course, very appropriate that amorphous phosphorus should form the amorphous phosphate of lime, but, unfortunately, phosphates made from the ordinary phosphorus also are precipitated in the amorphous condition. By what private mark does Dr. Nascher identify the amorphous phosphate produced by his amorphous phosphorus? Is it not a fact that he found the urine alkaline and detected a precipitate of amorphous calcium phosphate—always present in alkaline urine—and concluded that this must be his particular amorphous phosphorus in combination with calcium?

Dr. Nascher makes no record of examinations of the feces, although a great part—sometimes the greater part—of ingested phosphorus is found in the feces in experimental work on phosphorus metabolism. If he had examined the feces he would doubtless have found the total quantity of amorphous phosphorus unchanged.

Nascher refers to several cases in which he has used this remedy and states that he had the most gratifying results. So far as we can learn, the benefit was entirely in the subjective symptoms of the patient. It seems evident, therefore, that his claims for the value of this remedy rest on no better foundation than an unproved theory without experimental basis.

ITS COMMERCIALIZATION

Thus far we have considered only the scientific aspects of amorphous phosphorus therapy. It is unfortunate that we cannot stop here. Some of our readers will have seen in recent medical journals half-page advertisements of amorphous phosphorus reading:

A New and Successful
Method of Treatment

For *SENILE ARTERIOSCLEROSIS* with its accompanying Debility and Degeneration, Excessive Viscosity of the Blood, with Consequent Diminished Nutrition, Functional and Senile Impotence, is with

Pill Phosphorus Amorphous S&D
(1 Grain Each)
Made under the direction of Dr. I. L. Nascher, New York

Samples and Literature from

SHARP & DOHME
Chemists since 1860
BALTIMORE
Chicago St. Louis New Orleans Atlanta Philadelphia
NEW YORK

Reproduction — reduced — of half-page advertisement appearing in medical journals.

The striking physical and chemical properties possessed by common phosphorus, together with the fact that phosphorus is one of the constituents of nerve-tissue, are probably responsible for the reputation which this element acquired generations ago as a remedy for sexual impotence and mental decay. Among scientific men this reputation was a fleeting one, for, when put to the test, the product failed. Like so many products with a similar history, the unearned reputation it obtained from medical men survived in the minds of the laity, and, as is always the case, the survival has been taken advantage of by quacks. Among charlatans and nostrum makers phosphorus is still in vogue. "Weak men's specialists" and venders of "lost manhood" and alleged aphrodisiac drugs "play up" the phosphorus fallacy for all it is worth.

It is worth noting that the present exploitation of amorphous phosphorus is following along somewhat similar lines. The asserted actions of amorphous phosphorus are such as may be calculated to appeal to the sexual neurasthenic. There is no doubt that the Sharp & Dohme advertisements will bring about an extensive use of this remedy, especially by the uncritical. The psychic element—which plays so large a part in the sexual neurasthenic—will result in favorable reports being given on the drug. Articles may be expected to appear in a certain class of medical journals, telling of the marvelous results that Dr. John Doe has had in the use of "Pill Phosphorus Amorphous S. & D." A luxuriant crop of testimonials may be expected to follow, and the *tout ensemble* will go far to sustain the Sharp & Dohme propaganda.

We are prompted to believe that Messrs. Sharp & Dohme do not fully realize the potentialities for harm that lie in their present exploitation of amorphous phosphorus. It hardly seems possible that a firm of standing would knowingly put on the market and advertise a worthless drug with an appeal to susceptible, infirm old men. The function of introducing new remedies to the medical profession is a responsible one, and a firm that assumes it should have among its officers some one sufficiently conversant with pharmacologic science to prevent such unscientific absurdities as that exhibited in the marketing of amorphous phosphorus, especially under such claims as those contained in the advertisements.

THE RELIGIOUS PRESS AND THE GREAT AMERICAN FRAUD

The Western Christian Union Gives a Nostrum an Editorial Boost

Time was when the religious press was one of the greatest offenders against public health and common decency in the class of advertisements it tolerated. In the past half-decade, great changes have taken place and the better class of religious journals are now comparatively free from at least the worst forms of medical fraud. Not all of the black sheep, however, have been weeded out. The *Western Christian Union*, published at Booneville, Missouri, edited and owned by the Reverend E. W. Pfaffenberger, comes to its readers February, 1914, with an advertisement of the fraudulent epilepsy cure put out by the Towns Remedy Company, Baltimore. Not only in the advertising pages is the Towns fraud given space; Mr. Pfaffenberger also takes occasion to give it editorial endorsement.

"We have profound respect for Dr. Towns and his splendid remedy" says the Reverend Pfaffenberger. "Believing that we are rendering a Good Samaritan service for the afflicted, we make this little editorial comment, wholly of our own accord, and without money or price."

The Towns concern has been shown up before in these pages and the matter appears at some length in "Nostrums and Quackery." The stuff used to be labeled "Dr. Towns' Epilepsy Cure." As it was not a "cure," and as "Doctor" Towns was not a physician, the exigencies of the Food and Drugs Act made it inadvisable to continue to lie on the label. At present, therefore, we find the stuff labeled not "Dr. Towns' Epilepsy Cure," but "Towns' Epilepsy Treatment." The product is, as usual, a bromid mixture that is taken indiscriminately by the public in doses that no physician with any regard for the welfare of his patient would dare to give.

That the Towns Remedy Company considers the editorial comment of the Reverend E. W. Pfaffenberger a good advertising asset is evident. Persons who have at any time written to the Towns concern and have thus got their names on the company's "sucker list," received a marked copy of the *Western Christian Union* for February, 1914, calling attention to the reverend gentleman's eulogy of the nostrum.

The Reverend Pfaffenberger in the same issue reminds his ministerial readers that he issues a booklet on "Heaven and Our Sainted Loved Ones." This booklet, he says, has been found most helpful by ministers "in preparing funeral addresses." We might suggest that he make a special price on these booklets to the Towns Remedy Company, as we can imagine no better place for distributing them than to those unwitting victims of fraudulent and dangerous "cures" for epilepsy.

Seriously, however, we would call the attention of the editor and publisher of the *Western Christian Union* to the grave injury he is doing his readers—and himself—by giving editorial endorsement to so flagrant a fraud as the Towns epilepsy cure. We might further remind him that it is no longer considered good form in journalistic circles for the publishers of any save certain of the privately owned medical journals to give editorial endorsement to the products that appear in their advertising pages.

SODIUM BICARBONATE AS AN ANTIDOTE TO CORROSIVE SUBLIMATE

Much publicity has been given to the subject of poisoning by mercuric chlorid, with the result that the newspapers have reported a veritable epidemic of "corrosive sublimate" suicides. The Chicago newspapers have been giving considerable publicity to a supposed antidote for mercuric chlorid poisoning said to have been originated by a local physician. A specimen of this antidote, sent in by a subscriber, was submitted to our chemical laboratory for examination. The following is the chemist's report:

> "The specimen consisted of pink tablets weighing, on an average, 0.35 gm. (about 5½ grains). Besides the pink dye, which was not identified, and a little corn-starch, the tablets appeared to be composed only of sodium bicarbonate. The volumetric estimation of the sodium bicarbonate by titration with acid indicated the presence of 91 per cent. of sodium bicarbonate."

It is evident that the asserted antidote, so far as the specimen submitted to the laboratory is concerned, is simply sodium bicarbonate.

Association News

CONFERENCE OF SECRETARIES OF STATE ASSOCIATIONS

The secretaries of the state associations met in conference at the American Medical Association Building, Chicago, Wednesday morning, February 25, at 9:30, and continued in session during the day.

The following were in attendance: Arizona, C. E. Yount, Prescott; Arkansas, C. P. Meriwether, Little Rock; California, Philip Mills Jones, San Francisco; Delaware, G. W. K. Forrest, Wilmington; Georgia, William C. Lyle, Augusta; Idaho, E. E. Maxey, Boise; Illinois, W. H. Gilmore, Mt. Vernon; Indiana, C. N. Combs, Terre Haute; Iowa, J. W. Osborn, Des Moines; Louisiana, L. R. DeBuys, New Orleans; Maine, John B. Thompson, Bangor; Maryland, W. S. Gardner, Baltimore; Massachusetts, Walter L. Burrage, Boston; Minnesota, Thomas McDavitt, St. Paul; Mississippi, E. F. Howard, Vicksburg; Missouri, E. J. Goodwin, St. Louis; Montana, Herbert D. Kistler, Butte; Nebraska, Joseph M. Aikin, Omaha; Nevada, M. A. Robison, Reno; New Hampshire, D. E. Sullivan, Concord; New Jersey, Thomas N. Gray, East Orange; New York, Wisner R. Townsend, New York; North Carolina, John Ferrell, Washington, D. C.; North Dakota, H. J. Rowe, Casselton; Ohio, C. D. Selby, Toledo; Oklahoma, Claude A. Thompson, Muskogee; Oregon, M. B. Marcellus, Portland; Pennsylvania, C. L. Stevens, Athens; Rhode Island, W. A. Risk, Providence; South Carolina, E. A. Hines, Seneca; Tennessee, Perry Bromberg, Nashville; Texas, Holman Taylor, Fort Worth; Utah, W. Brown Ewing, Salt Lake City; Vermont, J. M. Hamilton, Rutland; West Virginia, A. P. Butt, Davis; Wisconsin, Rock Sleyster, Waupun; Wyoming, W. H. Roberts, Sheridan.

Reports were made on the action taken by the several state associations on the recommendations made by the previous conference of state secretaries looking toward the uniform regulation of membership. These reports showed that the essential features advised had been adopted or were under consideration in the majority of the states. At this time, however, it is impracticable to insist on uniformity in details that are not absolutely essential, as the varying conditions in the several states necessitate certain special regulations which would prove a hardship on others. The subject of the transfer of members was thoroughly discussed—the difficulties which the subject presents as well as the advisability of coming to some uniform regulation in this matter.

The ideals and opportunities of the organization were discussed. The economic problems which the profession must meet, including workingmen's liability and the income tax, were presented to the conference and by resolutions adopted were referred to the appropriate agencies of the Association for further elaboration.

BOARD OF TRUSTEES ELECTIONS

At the meeting, February 27, of the Board of Trustees of the American Medical Association, the following were elected:

Dr. John Howland of Baltimore and Dr. Henry Kraemer of Philadelphia, as members of the Council on Pharmacy and Chemistry; Dr. Carl L. Alsberg, chief of the Bureau of Chemistry of the Department of Agriculture, to succeed Dr. L. F. Kebler *on the Council.*

Dr. Joseph L. Miller, as a member of the editorial board of the *Archives of Internal Medicine.*

Dr. John Lovett Morse of Boston, as a member of the editorial board of the *American Journal of Diseases of Children.*

Correspondence

A Warning

To the Editor:—A Mr. E. S. Armstrong, supposed to reside at St. Cloud, Minn., has been traveling over the country for years taking orders and payment in advance on clothing which he does not deliver. I was a recent victim. The receipt given shows the name of J. D. Hinshaw, merchant tailor, Boston Block, Minneapolis. Any one knowing the present whereabouts of Mr. Armstrong will confer a favor by writing to me. Gaylord Worstell, M.D., Big Sandy, Mont.

The Value of School Inspection During Epidemics

To the Editor:—February 1, the chairman of the Board of Health notified the school physicians of the ninth school district in South Manchester, Conn., (which has about 2,000 pupils) that seventeen cases of scarlet fever had been reported in a short time, ten of them being in schoolchildren in that district. One case was in the high-school building, seven in the Lincoln School and two in Cooper Hill School.

The following day we began our inspection. Every child in attendance was examined twice the first week and once the following week. Two physicians did the examining, working in the same room so that both could see any suspicious case. Each child rolled up his left sleeve as far as possible and the arm was examined for any rash; and the arm, hand and fingers for any desquamation; also the face, throat and tongue were examined. A physician can easily examine 100 children an hour when the work is systematized.

At the first inspection at the Lincoln School, where seven cases had been reported, we found one child with a rash, red throat and temperature of 100, and another who was peeling. There were also six who seemed suspicious but who were readmitted to school in a few days. At the Cooper Hill School two were found desquamating freely. At the high-school building we found nothing suspicious. The rooms in which the children with scarlet fever had been found and the books and pencils used by those children were fumigated. At the second and third inspections no cases of scarlet fever were found.

In the nineteen days since we began the inspection but one case has developed in the ninth school district. The children in this boy's room were examined the day after his case was reported. Four red throats were found which were all right the next day, and one boy was sent home as suspicious to be seen later. The four active cases which we excluded would undoubtedly have been responsible for others, and in an epidemic of mild scarlet fever like the present one it might have continued indefinitely if we had not checked it by the *foregoing method.*

T. G. SLOAN, M.D., South Manchester, Conn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

QUESTIONABLE TREATMENT OF MERCURIC CHLORID POISONING

To the Editor:—I note in the Chicago *Tribune* for Feb. 18, 1914, a new method of treating bichlorid of mercury poisoning, attributed to Dr. J. M. Hirsch, which raises several interesting questions. According to Dr. Hirsch, ½ teaspoonful of sodium bicarbonate is *to be given every hour for two days, and then every four hours* for six days. The following is given as the mode of action:

"Soda converts bichloride of mercury into calomel and then into insoluble oxides and carbonates of mercury. Calomel acts as a purgative and rids the intestines of mercury. Some of the mercury oxide unites in the intestines with sulphur compounds to make sulphide of mercury, a relatively harmless substance. If the mercury has already been absorbed the soda dissolves the albuminate of mercury and changes it into calomel and oxides, less harmful forms, which the kidneys then excrete.

"If the vomiting prevents the use of soda by the stomach it should be given as follows: One hundred and twenty grams of chemically pure bicarbonate of soda is dissolved in one pint of salt solution (eight parts to every thousand). Inject sixty minims into a vein once every six hours."

The questions that this method suggests are:

1. Will sodium bicarbonate precipitate a solution of corrosive sublimate?
2. Will it produce calomel from corrosive sublimate?
3. How can the kidneys excrete insoluble calomel and oxids more easily than mercury albuminate?
4. Can 120 gm. of sodium bicarbonate be dissolved in 500 c.c. (1 pint) of 0.8 per cent. sodium chlorid solution? A. W.

ANSWER.—1. No. Sodium bicarbonate will not precipitate mercuric chlorid (corrosive sublimate) quantitatively under conditions similar to those in the stomach. Theoretically this might be interpreted as follows: Mercuric chlorid is one of the salts which are only slightly ionized, and consequently the concentration of the mercuric ion $[Hg^{++}]$ *times* the square of the concentration of the bicarbonate ion $[\overline{HCO_3}]^2$ is *not* greater than the ion product constant (I. P. C.) for $Hg(HCO_3)_2$.

$$[Hg^{++}] \times [\overline{HCO_3}]^2 < \mathrm{I.\,P.\,C.}_{Hg(HCO_3)_2}$$

The mercuric bicarbonate formed in solution, however, is capable of breaking down, but this action will not go to completion unless the carbon dioxid is removed. This would not occur under conditions such as those in the stomach. Experiments conducted in the A. M. A. Laboratory, as well as those reported in standard works, tend to confirm the statement of incomplete precipitation.

2. That sodium bicarbonate will produce mercurous chlorid, HgCl (calomel) from mercuric chlorid, $HgCl_2$ (corrosive sublimate) is contrary to all chemical facts. In order for this to happen the mercuric ion must lose a positive charge, or gain an electron:

$$Hg^{++} - \oplus \rightarrow Hg^{+}$$

In other words, reduction would have to take place, which would be unlikely inasmuch as (*a*) no readily oxidizable substance (that is, no substance capable of taking on an added positive electric charge) would be present; (*b*) mercuric ion $[Hg^{++}]$ is quite stable; therefore, sodium bicarbonate will not reduce mercuric chlorid.

3. We are of the opinion that this is a fallacy. Mercuric albuminate would be more easily excreted by the kidneys than calomel. Probably the oxids and calomel would be entirely eliminated in the feces.

4. Here also Dr. Hirsch has made a mistake. It is impossible to dissolve 120 gm. of sodium bicarbonate in 1 pint (500 c.c.) of water even at 60 C. At body temperature only about 57.5 gm. are soluble in 1 pint of pure water. If sodium chlorid is added (as per directions) this would still further reduce the solubility since a common ion, sodium, $[Na^{+}]$ would be present. This would cause the ionization of sodium bicarbonate to be repressed, and accordingly, in order to establish chemical and physical equilibrium, sodium bicarbonate would necessarily be precipitated from its saturated solution. Hence a still smaller amount of sodium bicarbonate could be dissolved in a salt solution.

"THE ANATOMIST" OF REMBRANDT

To the Editor:—In THE JOURNAL, Feb. 14, 1914, W. M. Barton calls attention to the right arm of the cadaver in "The Anatomist" of Rembrandt, and asks if it is not "egregiously foreshortened." The query paves the way for some important questions, such as:

1. Was art in its early development aided by anatomy?
2. Is a knowledge of anatomy necessary to artists?
3. To what extent should anatomic exactness be required of artists and sculptors?

The third question is pertinent to Dr. Barton's criticism. Artistic anatomy means much more than the study of the dead body; it includes functional activity as well as structural composition; nor can it ignore the effect produced on the external form by such factors as sex, race, age, vocation, disease or the emotions.

The truly great artist must possess something more than the ability to copy what he sees; to manual dexterity and anatomic knowledge he must add a something whereby the results of his studies, and the creations of his imagination, shall impress the minds of others.

While some artists have neglected anatomic study, others, forgetting that it is only a means to an end, have followed dissection to an extreme. One of the greatest offenders was Michelangelo, many of whose works seem to have been made only to show his knowledge of anatomy. The same criticism applies to Baccio Bandinelli. Both masters seem to have delighted in painting muscular figures divested of skin.

Dr. Barton's criticism of Rembrandt's masterpiece is well taken from the anatomic, but is incorrect from the artistic point of view. Many of our best works are incorrect in their anatomy; and often the error has been made intentionally, in order to bring out a specific idea or a certain point of beauty. A scientific anatomist may well criticize the Apollo Belvedere, or the group called Laocoon, figures which are celebrated in the annals of art. The impressive Lion of Lucerne, which Thorwaldsen cut from solid rock to commemorate the brave Swiss defenders of Louis XVI, is far from being leonine in its details. It has a bovine tail, an anonymous mane and an impossible expression; yet, in spite of these anatomic faults, it carries its lesson.

To the credit of the ancient Greek masters it must be said that they never exaggerated their anatomy; and their best works were made by combining the beauties of various models and by adding thereto the fairy flights of the imagination. The finest products of the mallet and chisel date from a period when the internal anatomy of man was unknown. To use the words of Dr. Munro Smith, "Let anatomy and art remain separate, and each would be the better for it."

Rembrandt's canvas was not the first of its kind. The practice of painting "anatomy lessons" began as early as the year 1603—fifty-two years after Philip II had consented that the bodies of criminals should be anatomized by Dutch surgeons; and numerous paintings of this kind were in existence at the time that Rembrandt tried his hand. All of these dissection scenes, with the possible exception of that by Mierevelt, must have been seen by Rembrandt, since they hung in the hall of the Surgeon's Guild in Amsterdam. That he was able to surpass any preceding work of this kind is living evidence of Rembrandt's superior talent.

JAMES MOORES BALL, M.D., St. Louis.

To the Editor:—Referring to Dr. J. F. E. Colgan's query in THE JOURNAL, Feb. 21, 1914, as to an incorrect origin and insertion of a muscle in Rembrandt's "Lesson in Anatomy," I think that the muscle is the pronator teres. I remember as a student that my attention was called to the fact that in the painting there is shown a muscle passing obliquely across the proximal part of the forearm, evidently intended for the pronator teres, but instead of passing from the ulnar distally to the radial side, it passes just the opposite, that is, distally from the radial to the ulnar side.

W. F. R. PHILLIPS, M.D., Mobile, Ala.

ARTICLES ON POLIOMYELITIS OF ANIMALS

To the Editor:—I should like to have some references to literature on poliomyelitis of animals and fowls.

J. M. WALKER, M.D., Kansas City, Mo.

ANSWER.—Following is a list of references to this subject:

Flexner, S., and Clark, P. F.: Paralysis in Dog Simulating Poliomyelitis, *Jour. Exper. Med.*, May, 1913.
Römer, P. H.: Paralysis in Guinea-Pigs Resembling Epidemic Poliomyelitis, *Deutsch. med. Wchnschr.*, June 29, 1911.
Römer, P. H.: Epidemic Poliomyelitis in Guinea-Pigs, *Med. Klin.*, July 9, 1911.
Bruno, J.: Domestic Animals and Fowls in Etiology of Epidemic Poliomyelitis, *München. med. Wchnschr.*, Sept. 9, 1913; abstr., THE JOURNAL, Oct. 18, 1913, p. 1497.
McGowan, J. P., and Rettie, T.: Poliomyelitis in Sheep Suffering from [illegible] *[illegible]h. and Bacteriol.*, July, 1913.
Neustaed [illegible] in Guinea-Pigs, THE JOURNAL, March [illegible]
Neustaed [illegible] C.: Experimental Poliomyelitis Produc[illegible] Dust of Sick-Room, *New York Med. Jour.*, [illegible]
Marks, H. K.: Infection of Rabbits with the Virus of Poliomyelitis, *Jour. Exper. Med.*, August, 1911.
Thomsen, O.: Experimental Poliomyelitis in Monkeys, *Hospitalstid.*, June 5, 1912.
Flexner, S.: Experimental Poliomyelitis in Monkeys, THE JOURNAL, Sept. 24, 1910, p. 1105.

Flexner, S., and Clark, P. F.: Experimental Poliomeylitis in Monkeys, THE JOURNAL, Feb. 25, 1911, p. 585; *ibid.*, July 27, 1912, p. 273.
Langhorst, H. F.: Possible Transmission of Poliomyelitis through the Dog, THE JOURNAL, Dec. 28, 1912, p. 2312.

ARTICLES ON CARBON MONOXID GAS POISONING

To the Editor:—Please advise me where I can get a book or literature on gas poison as it occurs in the copper mines in this section of the country.

E. C. DEMOSS, M.D., Lordsburg, N. Mex.

ANSWER.—The following references to the treatment of carbon monoxid gas poisoning may be consulted:

McConnell, J. W., and Spiller, William G.: A Clinicopathologic Study of Carbon Monoxid Poisoning, THE JOURNAL, Dec. 14, 1912, p. 2122.
O'Malley, Mary: Carbon Monoxid Poisoning with Acute Symptoms, Relapse with Psychotic Symptoms, and Complete Recovery, THE JOURNAL, Oct. 26, 1912, p. 1540.
Courmont, J.; Morel, and Mouriquand, G.: Chronic Carbon Monoxid Intoxication, *Bull. de l'Acad. de Méd.*, Dec. 20, 1911; abstr., THE JOURNAL, Feb. 4, 1911, p. 384.
Dana, H. W.: Gas Poisoning, *Boston Med. and Surg. Jour.*, May 27, 1909; abstr., THE JOURNAL, July 10, 1909, p. 118.
Jones, G. J.: Illuminating-Gas Poisoning, *Am. Jour. Med. Sc.*, January, 1909; abstr., THE JOURNAL, Feb. 6, 1909, p. 473.
Handbook of Therapy, p. 114.
O'Malley, M.: Psychosis Following Carbon Monoxid Poisoning with Complete Recovery, *Am. Jour. Med. Sc.*, June, 1913.
Clovini, M.: The Leukocytes and Bone-Marrow in Carbon Dioxid Poisoning, *Riforma med.*, 1913, xxix, Nos. 37 and 42.
Fishbein, M.: Illuminating-Gas Poisoning, THE JOURNAL, March 8, 1913, p. 737.
Tammerfeldt, T.: Danger from Explosion Gases in Mining, *Norsk. Mag. f. Lægevidensk.*, February, 1913; abstr., THE JOURNAL, March 15, 1913, p. 874.

ARTICLES ON LANE BONE-PLATES

To the Editor:—Please give references to articles and abstracts on the Lane plates

J. W. MARTIN, M.D., Des Moines, Iowa.

ANSWER.—Following is a list of references to articles on this subject:

Bartlett, W.: Further Experimental and Clinical Work Bearing on the Value of Lane Bone-Plates, THE JOURNAL, Aug. 3, 1912, p. 346.
Babler, E. A.: End-Results of Sixty-Six Platings, THE JOURNAL, May 25, 1912, p. 1580.
Bartlett, W.: Seventy-Six Operations in Which Lane Bone-Plates were Used, *Boston Med. and Surg. Jour.*, Jan. 30, 1913.
Huntingdon, J. W.: Ununited Fracture Treated Twice Unsuccessfully by Lane Plate Method and Successfully by Insertion of Tibial Bone Plate, *Northwest Med.*, March, 1913.
Bartlett, W.: Treatment of Fractures with Lane Plates, *Illinois Med. Jour.*, April, 1912.
Lane, W. A.: The Use of Plates and Screws in the Operative Treatment of Fractures, *Practitioner*, London, November, 1910.
Lane, W. A.: Operative Treatment of Simple Fractures, *Surg., Gynec. and Obst.*, April 1901; abstr., THE JOURNAL, May 15, 1909, p. 1621.
Wood, A.: Safety Screw-Driver and Screws for Lane Plates, *Med. Rec.*, New York, Dec. 14, 1912.

SALT ENEMAS AFTER CALOMEL—KEROSENE ENEMAS FOR ROUNDWORMS

To the Editor:—1. Is it safe to use a normal salt enema after calomel has been given?

2. Would there be danger of salivation?

3. Is it safe to use enemas of from 4 to 6 ounces of kerosene to destroy roundworms?

4. Would it render it safe to irrigate the rectum with a soap-suds enema afterward?

M. F. MOSLEY, M.D., Oak Park, Ga.

ANSWER.—1. Yes.

2. The action of sodium chlorid on calomel is so slight that there would be practically no danger of salivation under the circumstances named.

3. Kerosene is an irritant which would provoke an evacuation of the bowels and probably leave no permanent bad results. Since roundworms inhabit the small intestine, we doubt the efficacy or advisability of the use of such an irritant for the purpose of destroying them.

4. The irrigation proposed would be an excellent method of removing the irritant oil.

EFFECT OF ADDICTION TO ASPIRIN

To the Editor:—What effect, if any, has aspirin on the mental condition? A nervous woman, aged 45, on the advice of a friend, has, for the past two years, taken 5-grain tablets (one to a dose), from three to ten times daily for neuralgic pains, headaches, etc., and her mental condition is similar to that of one addicted to the morphin habit.

C. R. PONTIUS, M.D., Fremont, Ohio.

ANSWER.—We find no reference in the literature to indicate that aspirin (acetylsalicylic acid) has any effect on the mental condition, nor do we know of any instance in which this drug produced an addiction similar to the morphin habit.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7. Sec., Dr. John Wix Thomas, Phoenix.

COLORADO: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, March 10. Sec., Dr. Charles A. Tuttle, New Haven. Homeopathic: New Haven, March 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Eclectic: New Haven, March 10. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

IDAHO: Wallace, April 7. Sec., Dr. John F. Schmershall, Jerome.

MAINE: Portland, March 10-11. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, March 10-12. Sec., Dr. Walter P. Bowers, Room 159, State House, Boston.

MINNESOTA: Minneapolis, April 7-10. Sec., Dr. Thomas McDavitt, 814 Lowry Bldg., St. Paul.

MONTANA: Helena, April 7. Sec., Dr. Wm. C. Riddell, Helena.

NEW MEXICO: Santa Fe, April 13. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, April 14. Sec., Dr. John W. Duke, Guthrie.

RHODE ISLAND: Providence, April 2. Sec., Dr. Gardner T. Swarts, Room 315, State House, Providence.

UTAH: Salt Lake City, April 6-7. Sec., Dr. G. F. Harding, 403 Templeton Bldg., Salt Lake City.

WYOMING: Laramie, March 10-12. Sec., Dr. H. E. McCollum, Laramie.

California August Report

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at San Francisco, Aug. 5-8, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75, with a minimum of 60 per cent. in each subject; credit of five points allowed for each ten years of legal practice, provided a minimum of 60 per cent. in each subject is attained. The total number of candidates examined was 169, including 50 osteopaths, of whom 133 passed, including 34 osteopaths, and 36 failed, including 16 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
California Eclectic Medical College	(1913)	82.2, 90.4
College of Physicians and Surgeons, Los Angeles	(1913)	79.8, 80.2, 80.7, 81.7, 82.7, 83.4, 84.4, 85, 86.4, 86.6, 87, 87.9, 89.3, 90, 91, 91.6, 91.7, 92, 92.7, 92.9.
College of Physicians and Surgeons, San Francisco	(1911)	75, (1912) 76.5, (1913) 87.3.
Hahnemann Medical College, San Francisco	(1912)	75, (1913) 77, 78.8, 79.9, 81.5, 82, 84.4, 84.5, 87.5, 87.5, 90.3.
Leland Stanford Junior University	(1913)	80.1, 84.2, 86.5, 88.6, 89.5, 90.9, 91.1.
Oakland College of Medicine and Surgery	(1909)	86.3, (1913) 81.1, 84.4, 84.8.
University of California	(1912)	99.2, (1913) 86.1, 87.2, 88.2, 88.9, 90, 90.4, 91.3, 93.8, 93.9.
University of Southern California	(1906)	77.9
Denver and Gross College of Medicine	(1906)	92.2
University of Colorado	(1900) 87.7, (1913) 84.7, 88,	91.2
College of Phys. and Surg., Chicago	(1896) 88.1, (1906)	86.1
Northwestern University	(1901)	95.6
Rush Medical College	(1894) 87.7, (1898) 93.8, (1902)	85.3
University of Illinois	(1912) 83.5, (1913)	90.3
Medical College of Indiana	(1885) 85, (1897)	89.1
Hospital College of Medicine, Louisville	(1901)	91.4
Kentucky School of Medicine	(1903)	94.1
Medical School of Maine	(1901)	85.5
[illegible] ity	(1906) 88.4, (1913)	87.3
[illegible] l	(1913)	87.8
[illegible] Dept. of M. & S.	(1908)	87.1
Marion Sims College of Medicine	(1898)	81.1
St. Louis College of Physicians and Surgeons	(1898)	87.7
[illegible]	(1913)	87.3
[illegible] St. Louis	(1905)	77.5
[illegible]	(1895)	80.3
[illegible] d Hospital for Women	(1895)	86.6
University of Buffalo	(1909)	79.9
Cleveland University of Medicine and Surgery	(1897)	80.2
[illegible] ege	(1912)	76.4
[illegible] 1898) 88.7, (1902) 83.1,	(1913)	88.7
[illegible]	(1911)	75
[illegible]	(1902)	92.5
Vanderbilt University	(1913)	78.5, 84.5, 86.3, 87.4
University of Vermont	(1911)	84.6

FAILED

College	Year Grad.	Per Cent.
California Eclectic Medical College	(1913) 64.2, 66.9, 70.1,	72.9
College of Physicians and Surgeons, Los Angeles	(1913)	72.2
College of Physicians and Surgeons, San Francisco	(1911)	29.4
Cooper Medical College, San Francisco	(1906)	72.5
Chicago College of Medicine and Surgery	(1913)	59.9
Hahnemann Medical College, Chicago	(1882) 55.4, (1900)	75.8*
Medical School of Maine	(1896)	64.3

Baltimore Medical College	(1913)	63.6
American Medical College, St. Louis	(1913)	69.4
Barnes Medical College	(1893)	64.5
University Medical College, Kansas City	(1909)	59.8
Eclectic Medical College, Cincinnati	(1913)	70.7
Medical College of Ohio	(1887)	74
Imperial University, Tokyo, Japan	(1892)	78*
Royal University of Naples	(1903)	59.2
Royal College of Physicians and Surgeons, Edinburgh and Glasgow	(1911)	71

* Below 60 per cent. in more than one subject.

The following questions were asked. In each subject only ten questions were to be answered.

ANATOMY

1. Give the topographic anatomy of the elbow. (*b*) Give the topographic anatomy of the hip. 2. Give the surface markings of the following organs; (*a*) spleen, (*b*) pancreas, (*c*) heart, (*d*) right kidney, (*e*) left kidney. 3. Give the relations of the internal iliac artery. 4. Describe the origin and course of the sixth cranial nerve. 5. Describe the ischiorectal fossa. What vessels and nerves are found in this fossa? Name the factors which predispose to abscess in this region. 6. What is the effect of paralysis of the median nerve? Of the ulnar nerve? 7. Discuss some of the phenomena due to enlargement of the thyroid gland with reference to the anatomic relations of the gland. 8. Describe the plan of distribution of the twelfth dorsal nerve. 9. Name the arteries and nerves which supply the duodenum. What veins drain this region? 10. Describe the lacrimal apparatus. 11. What nerves are likely to be involved in fracture of the middle fossa of the skull? 12. Describe the peritoneum. (*b*) What is its function?

PHYSIOLOGY

1. What variations are found in the composition of healthy blood? 2. What is an isotonic solution, in comparison with the blood? 3. Describe the sounds incident to a normal heart-beat. 4. Describe how variations in resistance to the flow of blood are regulated in peripheral blood-vessels. 5. Give examples of the following classes of enzymes: amylolytic, lipolytic, proteolytic, coagulating, activating. 6. What is the rôle of bile in intestinal digestion? 7. To what extent does the stomach perform the function of absorption? 8. What are the requisites of a normal diet? 9. What value have cutaneous and muscle reflexes? 10. What are the effects on the relations of the gases of the blood, due to alterations in atmospheric pressure? 11. What are the functions of the cerebellum? 12. Describe muscle sense.

CHEMISTRY AND TOXICOLOGY

1. Select the five most important reagents for a urinalysis outfit and state why you select each. 2. Describe Ehrlich's diazoreaction. Of what diagnostic importance is it? 3. What do you understand by "occult" blood and how would you test for it? 4. What is the explanation of souring and curdling of milk? How is soured milk supposed to prolong life? 5. Express in Centigrade 104 Fahrenheit. Give rule for transposing Centigrade to Fahrenheit. 6. What is the poison in most headache powders? Symptoms? Antidote? 7. How would you determine presence of abnormal quantity of chlorin in drinking-water? What does it indicate? 8. Name a secretion in the body containing (1) cholesterin, (2) pepsin, (3) trypsin. 9. Define organic chemistry; inorganic chemistry; physiologic chemistry. 10. Give the chemical and physiologic antidotes of phosphorus poisoning. 11. Give tests for phenol poisoning and antidote. 12. Outline the fate of carbohydrates in the body.

HISTOLOGY

1. Describe a transverse section of the appendix. Make drawing. 2. What microscopic features would enable you to distinguish a section of the submaxillary gland from one of the pancreas? 3. What microscopic features would enable you to distinguish a section of the cortex of the ovary from a section of the cortex of the kidney? Make drawings. 4. Describe the microscopic features which would enable you to distinguish a transverse section of the duodenum from a like section through the colon. Make drawing. 5. What histologic features would enable you to distinguish a section of the cerebellum from one of the thymus gland? Make drawings. 6. (*a*) Name all the different forms of sensory nerve-endings (excluding the organs of special sense). (*b*) Motor nerve-endings. (*c*) Describe two forms. 7. Compare a sebaceous gland, histologically, with a sudoriparous gland. Make drawings. 8. Describe the histologic features that would enable you to distinguish a longitudinal section through a spinal ganglion from a transverse section through the spinal cord. Make drawings. 9. How could you distinguish a section through fat showing a transverse section of a medium-sized artery, from a section of lung showing a section across a medium-sized bronchus? Make drawings. 10. How does spermatogenesis differ from karyokinesis? 11. Name all the structures derived from the ectoderm or epiblast. 12. Define the following terms: (*a*) osteoclast, (*b*) mesoderm, (*c*) oogonium, (*d*) spermatid, (*e*) spirem.

PATHOLOGY

1. Describe the repair of traumatic injuries (*a*) non-infected, (*b*) infected. 2. Describe the blood-changes in pernicious anemia and on necropsy. What changes are found in the bone-marrow and in the gastro-intestinal mucous membrane? 3. What changes may take place in the mucous membrane of the stomach after death which may lead to error on necropsy unless taken into consideration? 4. Describe some of the conditions found in the newly born as the result of syphilis. 5. Name five diseases in which the relative number of leukocytes are increased and five in which they remain stationary or are decreased. 6. Describe and locate the pathologic changes in amebic dysentery. 7. Describe the conditions in which sudden and serious edema of the lungs is liable to occur. 8. How does the respiratory tract (nose, bronchi and lungs) protect itself against infectious bacteria, especially the tubercle bacilli, and under what circumstances does infection occur? 9. Describe the condition you would expect to find in the affected lung in a case of pleurisy (*a*) in a favorable case at the end of three days, (*b*) in an unfavorable case at the end of ten days. 10. Locate and describe the changes in the brain in bulbar paralysis and describe the effect on other parts of the body. 11. Give pathology of arteritis and describe the results. 12. Describe the condition resulting from occlusion of the portal vein and give reason for the same.

BACTERIOLOGY

1. Name two Gram-negative bacilli associated with acute or subacute conjunctivitis. How do they differ? 2. What micro-organism causes glanders? Describe a potato culture of the same. 3. What is meant by an "acid-fast bacillus"? Name two examples of pathogenic acid-fast bacilli. 4. What culture and staining peculiarities would enable you to distinguish the *Diplococcus gonorrheae* from the *Micrococcus catarrhalis?* 5. What is the agent considered at the present time responsible for the transmission of acute anterior poliomyelitis? (*b*) For the transmission of yellow fever? (*c*) For the transmission of malaria? 6. What do you understand by immunity? How classified? Give an example of each. 7. What do you understand by a bacterial vaccine? (*b*) What do you understand by an autogenous vaccine? (*c*) What do you understand by a polyvalent vaccine? 8. What is diphtheria antitoxin? How does it differ from old tuberculin? 9. What micro-organism is considered the cause of syphilis? Give a brief description. 10. If you were given the head of an animal suspected of having had rabies, how would you confirm the diagnosis? 11. Show by drawing that you would be able to distinguish (*a*) *Bacillus anthracis,* (*b*) *Bacillus tetani,* (*c*) gonococcus, (*d*) *Bacillus diphtheriae.* 12. What nonpathogenic bacillus that might be mistaken for T. B. is commonly present on human beings? How differentiated from T. B.?

GENERAL DIAGNOSIS

1. What factors must be considered in estimating the condition of a patient suffering from diabetes mellitus? What complications are to be feared and what are the terminal symptoms found in this disease? 2. Describe the lesions found in erythema nodosum. 3. From what and how must the rash of scarlet fever be differentiated? 4. What may cause an enlargement of the spleen? Give the accompanying signs and symptoms in any one of those diseases. 5. What factors would you consider in advising for or against surgical intervention in prostatic hypertrophy? 6. Differentiate typhoid fever from tuberculous meningitis. 7. Name and differentiate the bradycardias. 8. Give the symptoms of lateral sinus infection developing in the course of an otitis media. 9. Differentiate an epileptic from a uremic convulsion. 10. On what would you base a diagnosis of infection by the *Ankylostomum duodenale?* 11. Differentiate scabies from urticaria. 12. Differentiate chancre, chancroid and herpes progenitalis.

OBSTETRICS

1. Give some of the more serious symptoms of toxemia of pregnancy with possible effect on mother and child. What is the cause? 2. In difficult labor give technic of delivery of shoulders after head is born. Which shoulder would you deliver first? 3. What is the usual cause of prolapse of pelvic viscera following labor? What measures would you advise for relief of this condition? 4. How does pubiotomy and symphyseotomy differ? Which is attended with greater mortality to mother? 5. Discuss the matter of version. Give the varieties (*a*) with reference to the fetus, (*b*) with reference to mother. 6. In forceps delivery what conditions, complications and emergencies should operator be prepared for? 7. Give the symptoms of incomplete abortion. How would you manage the case? 8. How would you prepare your patient for immediate repair of cervix following labor? What advantages are gained by early operation? 9. In considering the functions of the pelvic floor during labor how does the functions of the posterior segment differ from the anterior? 10. In approximating stage of development from size of womb during pregnancy where would you find the fundus (*a*) at six weeks, (*b*) at twelve weeks, (*c*) at twenty-four weeks, (*d*) at thirty-two weeks? 11. What are the natural forces which tend to control and prevent hemorrhage following delivery, and what artificial means can be used when necessary? 12. In puerperal sepsis what is the difference in the character of the infection and blood-test between sapremia and septicemia?

GYNECOLOGY

1. Make drawing of female internal generative organs, indicating their size and relative location. 2. Describe the female perineum. 3. What is a urethral caruncle—give symptoms. 4. What may cause an amenorrhea in a woman 30 years of age? 5. Give the symptoms and laboratory findings in cystitis. 6. Name the causes of uterine enlargement and differentiate two. 7. What office equipment is necessary for making a gynecologic examination? 8. Differentiate acute unilateral salpingitis from acute appendicitis. 9. What anatomic changes occur in order that a retroversion of the uterus may develop? 10. Give the early diagnosis of uterine cancer. 11. What are the pathologic and symptomatic sequelae of an unrepaired lacerated perineum? 12. Give the physical and laboratory findings and sequelae of gonorrhea affecting the female genito-urinary tract.

HYGIENE

1. Define certified milk; inspected milk; pasteurized milk, and give your opinion as to which a municipality should require, considering the matter from a hygienic and economic point of view. 2. What are the causes of ordinary "colds" and what can be done to prevent "catching cold?" 3. Name the three species of tapeworms of which man may become the host. In what food are they found? 4. How does hookworm disease enter the human system and what measures would you take to prevent it? In what states is it most prevalent? 5. What sanitary measures should be adopted in caring for tuberculous patients? 6. What effect have venereal diseases on the propagation of the human species? Explain. 7. What is the period of incubation for each of the following diseases: (1) plague, (2) small-pox, (3) diphtheria, (4) scarlet fever, (5) measles? 8. What hygienic precautions should be observed in a pregnant woman? 9. What should municipal authorities do to reduce infant mortality from digestive diseases? 10. Why is candy one of the articles of diet now supplied soldiers? What are the
[illegible] 11. What are the causes of mouth-
erious effects? What would you do
a child? 12. In a typhoid epidemic
the source of infection?

Book Notices

A Manual of Operative Surgery with Special Anatomy and Surface Markings. By Duncan C. L. Fitzwilliams, M.D., Ch.M., F.R.C.S., Surgeon in Charge of Outpatients, St. Mary's Hospital. Cloth. Price, $3.75 net. Pp. 450, with 284 illustrations. New York: William Wood & Co., 1913.

It is difficult for any text-book on operative surgery, no matter how many pages it may number, to offer anything new. At most the author can merely present the matter in a new way or content himself with describing only such methods as he favors. The purpose of this book is to present the main points in surgical and surface anatomy. In this the author has succeeded well. The large number of pictures which show these markings will prove valuable to the occasional operator or the beginner; but whether either of these should acquire his skill and even first lessons in surgery from a text-book is a debatable question. The pictures, however, are good. The text is well written, although the author fails to mention many well-known and widely adopted procedures, such as Andrews' imbrication method in hernia, the Mayo operation for umbilical hernia and the Ferguson operation for hernia and cleft-palate. Perineal prostatectomy is not mentioned; indeed, American surgeons are not given much attention in the book, in spite of the fact that surgery has received its greatest impetus from American surgeons. The surgical treatment of appendicitis is well described, but only one type of incision is spoken of, and that not the one mostly used. The only operations on the testicle mentioned are those for varicocele and castration. Ovariotomy, hysterectomy, cesarean section and ventrifixation and suspension comprise the operations on the female genito-urinary tract. Abscess and carcinoma apparently are the only diseases of the mammary gland requiring surgical intervention. On the other hand, forty pages are devoted to ligature of arteries, seventeen to operations on nerves, eighty-five to amputations and disarticulations, fifty to osteotomies and excisions of bones, and ten to operations on the air-passages—surely not a fair division if based on the good that may accrue from surgical treatment. As a manual of operative surgery, this book would appear to be a failure—one which can prove of but little value to the practitioner and of practically none to the student.

A Text-Book on Gonorrhea and Its Complications. By Dr. Georges Luys. Translated and Edited by Arthur Foerster, M.R.C.S., L.R.C.P. Cloth. Price, $4.50 net. Pp. 384, with 203 illustrations. New York: William Wood & Company, 1913.

This translation of an authoritative text-book by a well-known foreign author is exceedingly gratifying in view of the absence of good works in English on this subject, for the author and the translator have intelligently combined to make a work of great value for American readers. A well-written historical summary of the subject forms an interesting first chapter. It is a real text-book in that it endeavors to teach one subject thoroughly. The following statement from the preface of the translator is significant: "Some of our readers will regret that the references to vaccine treatment are brief; but as neither Dr. Luys nor myself are greatly impressed by its achievements, we decided not to enlarge the paragraph relating to it." The book is profusely illustrated. The work is reliable, simple and carefully written, and therefore to be recommended for those interested in this difficult subject.

Diseases and Deformities of the Foot. By John Joseph Nutt, B.L., M.D., Surgeon-in-Chief, New York State Hospital for the Care of Crippled and Deformed Children. Cloth. Price, $2.75. Pp. 293, with illustrations. New York: E. B. Treat & Co., 1913.

At the present time when the rush of work in cities is bringing about an increase in deformities and diseases of the feet, this book is opportune. The author says: "With regard to the feet, much of the treatment is so simple that the general practitioner can and should assume the responsibility of preventing deformities, correcting abuses and those conditions which have already occurred and treating minor diseases of the bones and joints. In the first chapter, the anatomy of the foot is considered with special attention to the relation of the effects produced by various muscle pulls. Perhaps the most important chapter is the second which considers especially the relation of distribution of weight and movements of the foot in their relation to pain. The methods of examination are next considered, and then various special disturbances are thoroughly discussed from a general point of view. In the last two chapters more common complaints as painful heel, excessive sweating, corns, ingrowing toe-nail, callosities and finally foot-apparel are given attention. It would seem that the first three and last two chapters should be thoroughly studied by every physician in order that the general practitioner might be better prepared to undertake the treatment of those conditions with which he can cope as successfully as the trained orthopedist.

Orthopedics in Medical Practice. By Prof. Adolf Lorenz, Regierungsrat, Director of the Imperial University Ambulatorium for Orthopedic Surgery, and Dr. Alfred Saxl, Assistant Surgeon in the Imperial Ambulatorium for Orthopedic Surgery in Vienna. Authorized translation by L. C. Peel Ritchie, Ch.M., F.R.C.S. Cloth. Price, $3 net. Pp. 288, with 39 illustrations. New York: William Wood & Co., 1913.

This translation of an authoritative German work should be extremely welcome to the general practitioner. The book is intended to bring out particularly the various orthopedic conditions occurring in the average practice and to aid especially in early diagnosis. The various parts of the body are considered under the head of systems, and the relations of orthopedic disturbances to functional and organic diseases of various parts are analyzed. Early and differential diagnosis of the symptoms presented receive complete consideration. The work is excellent for the man in general practice and for the physician who has specialized along other than orthopedic lines, and is a guide for the orthopedic specialist himself.

A Thousand Books for the Hospital Library. Selected from the Shelf-List of the Library of McLean Hospital, Waverley, Mass. By Edith Kathleen Jones, Librarian. With Additions and Annotations by Miriam E. Carey, Supervisor of Institution Libraries, Minnesota State Board of Control. Florence Waugh, Librarian for State Institutions. Nebraska Library Commission, and Julia A. Robinson, Secretary Iowa Library Commission. Paper. Price, 25 cents. Pp. 56. Chicago: American Library Association, 1913.

This pamphlet is offered as a guide toward the selection of wholesome readable literature for those who are ill, either physically or mentally. Short notes are given which are an index to the contents of the various books recommended. A careful study of the titles shows that no book has been included which cannot safely be put into the hands of any invalid.

Text-Book of Anatomy and Physiology for Nurses. By Amy E. Pope, Instructor in the School of Nursing of the Presbyterian Hospital in the City of New York. Cloth. Price, $1.75 net. Pp. 554, with 135 illustrations. New York: G. P. Putnam's Sons, 1913.

This book gives much more space to physiology than to anatomy, differing in this respect from "Anatomy and Physiology for Nurses" by Diana Kimber, probably the most popular of its predecessors. There is a glossary which is so comprehensive that it might almost do duty as a dictionary; unfortunately the derivations of the words are not given. A table of "food values of a few food materials and prepared foods" is valuable, though it belongs properly in a book on dietetics instead of in a work on anatomy and physiology.

Hermann Lenhartz Mikroskopie und Chemie am Krankenbett. Von Professor Dr. Erich Meyer, Vorstand der Medizin, Universitätspoliklinik zu Strassburg i. E. Seventh Edition. Cloth. Price, 10 marks. Pp. 391, with 144 illustrations. Berlin: Julius Springer, 1913.

The seventh edition of this German guide to clinical diagnosis has been carefully prepared with the same degree of accuracy and regard for that which is reliable as well as new that has characterized previous editions. It is printed on a good quality of paper and there are some fine illustrations reproduced in colors.

Miscellany

New Method for Therapeutic Use of Typhoid Vaccine.

Dr. I. S. Kahn, San Antonio, Tex. (*Jour. Texas State Med. Soc.*, February, 1914), urges the use of small repeated doses of three or five million organisms in the treatment of typhoid. The results by this method are apparently just as satisfactory as from the use of larger doses. The culture used by him was ordinary prophylactic stock culture, diluted down with freshly boiled water.

That these small doses can produce general systemic results is shown by a rather curious experiment. Early in October, with a view to demonstrating that the presence of a local and slight systemic result would be of a diagnostic value in cases of typhiod before the appearance of the Widal agglutination reaction, and their absence of decided negative diagnostic value, Kahn administered to himself and the matron of the San Antonio City Hospital, each 5 million killed organisms of the culture he was then using as a therapeutic agent, neither of them having previously received the preventive prophylactic inoculations, and both with negative Widal reactions, excepting a negative result in each instance. The amount of the injection was 2½ minims. Marked local reactions appeared, five or six times the extent in area that would have been produced by similar injections of a sterile innocuous solution, and general constitutional symptoms of appreciable severity set in within three or four hours and were severe enough to warn Kahn never to exceed this dosage with typhoid patients already sick and febrile, until its previous administration had proved harmless.

He accounts for the occurrence of the positive local and general reactions on the score of old long-healed aborted or unsuspected typhoid infections, general or local, in the same manner as similar positive tuberculin reactions are explained in apparently healthy non-tuberculous persons. In all of his ten cases, the initial dose of from 3 to 5 million produced a local arm skin reaction. In only one or two instances was there an immediate temperature rise of from 0.5 to 1 degree of a few hours duration. Ordinarily no such rise appeared, and not a single patient felt any worse for the injection. Though the temperature remained unaltered as a general rule for the first few days following the initial injection, every patient showed a decided improvement in facial expression. All seemed brighter and less typhoidal. This change could be noticed within twenty-four hours. From Kahn's work it appears that a positive phase following this dosage is not induced before the expiration of from seventy-two to ninety-six hours. At this point usually a decline in temperature appears, at times assuming the wide morning remissions and a high evening rise so characteristic of the third week of the disease. Whether this decline appears or otherwise, the dose is not repeated.

If following any single injection a decline in temperature or a slow lysis is induced, succeeding injections are not repeated until the decline ceases. But Kahn has almost invariably had better results by repeating the initial dose on the third or fourth day, whether there are indications of decline or otherwise. It is following the second dose, given at the onset of the positive phase, that improvement usually becomes evident. If the local reaction at this time be slight or absent the next dose is doubled. If present and moderate, the next dose is not increased. That is, the initial dose, the interval to the second dose, and the second dose are more or less arbitrarily fixed. The size and intervals of the succeeding doses are governed by the local reaction and the temperature chart. If there is a decline, which is usually the case, no dose is given until the cessation of this decline, when the dose producing the decline is repeated, and doubled only if farther decline is not induced.

Foci of Incipient Tuberculosis.—In adults the existence of an incipient pulmonary tuberculosis can be demonstrated easily by careful percussion (provided that during the examination of the front of the chest the patient is in the recumbent position with relaxed muscles) long before any bacteriologic evidence is obtainable, and while the auscultatory evidence is insufficient for a diagnosis. In the upper lobe of each lung a focus of incipient pulmonary tuberculosis can be detected by careful percussion in the inner part of the first and second intercostal spaces in front, and in the inner part of the suprascapular space. A second focus can be detected in the outer part of the first and second intercostal spaces in front, and in the outer part of the suprascapular space. A third focus can be detected in the upper part of the lower lobe on each side by careful percussion at the posterior end of the scapular spine. These six dull areas are present in all cases of early pulmonary tuberculosis. I believe that they are not produced by any other morbid condition, and that they are sufficient for the diagnosis of a (past or present) tuberculous infection. Whether that infection is active or quiescent must be determined by the symptoms and auscultatory signs. In addition to the six apical areas, many other small dull areas can be found in the lungs in cases of early pulmonary tuberculosis. The position of these areas is practically invariable; they are nearly symmetrical in the two lungs, but show certain differences, which evidently result from the existence of three lobes in the right lung and of only two in the left.—D. B. Lees, M.D., in *Brit. Jour. Child. Dis.*

Child Labor Laws.—Massachusetts has a law providing for an eight-hour day for children under 16 years of age. A committee, appointed by the legislature to investigate the working of the law, recently made a report. While the report was not unanimous, it is said that the majority of the employers of children between the ages of 14 and 16 have been able to adjust their work so as to permit the employment of minors for no more than eight hours a day. While a number of unavoidable cases of hardship have been encountered by the committee under the working of this law, it is the opinion of the committee that they do not constitute a sufficient reason for its repeal. This investigation by the committee was begun immediately with the adoption of the law and covered the first four months of its existence. In Pennsylvania, it is said, more children under 16 years of age are employed in mills and factories than in any other state. In textile factories, children work fifty-eight hours a week. In glass factories young boys in some instances work all night long. Legislation to remedy these conditions has heretofore failed, but an attempt will again be made at the 1915 session of the Pennsylvania legislature to secure for children under 16 years of age an eight-hour day, to abolish night work, and to bring about a restriction of employment in certain dangerous trades.

Health Problems of Italy in the Fifteenth Century.—In an analysis of legislation in various countries on compulsory declaration of tuberculosis, A. Cramer (*Rev. méd. de la Suisse Rom.*, 1914, xxix, No. 1) calls attention to the fact that in 1481 the little republic of Lucca in Italy elected three citizens to serve as a board of health with full power to act in case of epidemics. They kept in touch with other countries to be forewarned of epidemics, and had the power to forbid entrance into the state of persons, animals or goods until after quarantine or disinfection. In 1699 a decree was passed that every case of tuberculosis must be reported by the physician to the authorities under penalty of 100 ecus. Circulars were distributed to families after the death of a consumptive, giving instructions to the family to beat and brush outdoors the curtains and other furnishings of the rooms. Consumptives were advised to select rooms facing the south or east. All classes, rich and poor, monks and nuns and laity, were compelled to conform to the regulations. A separate hospital for the tuberculous was planned but was never organized, on account of lack of funds. Compulsory declaration was enforced until 1799, when the republic lost its independence. Thus on a purely empiric basis the people of an older time wisely guarded themselves against propagation of infectious diseases.

Medicolegal

Chiropractics Under Wisconsin Law—Convictions Not Annullable by Habeas Corpus

(Arnold, Sheriff, vs. Schmidt (Wis.), 143 N. W. R. 1056)

The Supreme Court of Wisconsin reverses an order discharging the defendant on a writ of habeas corpus after he had been convicted of violating the state statute which prescribes qualifications for practicing medicine, surgery or osteopathy, and imposes penalties for unlicensed practice.

The complaint charged that the defendant did unlawfully and without authority hold himself out to the public as a physician, surgeon, and osteopathist, did practice medicine, surgery, and osteopathy, and did for a fee and for a compensation prescribe and recommend for a like use and apply medical and surgical treatment and osteopathic manipulation for the cure and relief of wounds, bodily infirmities, and diseases, not having obtained a license authorizing him so to do. If the complaint had charged that the defendant carried on business as a chiropractic, and did for a fee or compensation prescribe or recommend chiropractic manipulation, it is probable that the complaint would have stated no offense; but, if to this were joined an averment that that which the defendant practiced and carried on and prescribed was in fact a branch of osteopathy, although the defendant called it by the other name, the complaint would be good. So under the complaint and the evidence in this case the district court had jurisdiction to decide this question. It might have been convinced that the defendant was practicing osteopathy, notwithstanding he chose to call it by another name. It had jurisdiction to construe this statute, and, if it erred in its construction so as to make the term "osteopathy" cover more than it should cover, and include the quite similar acts done by the defendant, the remedy was by appeal and not by an abuse of the writ of habeas corpus.

In this case the court need consider only the charge of practicing osteopathy for a fee without having a license or certificate of registration. Osteopathy is defined in Webster's New International Dictionary as "a system of treatment based on the theory that diseases are chiefly due to deranged mechanism of the bones, nerves, blood-vessels, and other tissues, and can be remedied by manipulations of these parts." No such word as "chiropractic" or "chiropractice" is found in this dictionary. It appears to be a newly coined compound word suggesting hand practice. The state may well require a license for the purpose of regulation, and it may prescribe reasonable qualifications of the licensee having reasonable relation to the business or profession of osteopathy, understanding the latter as above defined. It has also the power to enforce this requirement by fine and imprisonment for practicing without a license. It does not invalidate the statute that it is limited to persons practicing for a fee. That is a legitimate ground of classification.

Liability of Employer for Malpractice of Physician Who Has Become Incompetent

(Guy vs. Lanark Fuel Co. (W. Va.), 79 S. E. R. 941)

The Supreme Court of Appeals of West Virginia affirms an order granting to the defendant company a new trial after the plaintiff had recovered a verdict for $12,500 damages for the alleged malpractice of a physician selected by the company to treat its employees and their families. The plaintiff was the wife of one of the company's employees. She having become ill, the physician was summoned and advised of a fear that it might be an abortion. He, however, merely took her temperature and gave her a few white tablets. He made no examination of her person. On his third visit it was asserted that he was drunk. It was afterwards found that the plaintiff was suffering from an abortion and an infection which necessitated a removal of the ovaries.

The court holds that an employer which employs a physician to treat its employees, and collects small monthly fees from their wages, all of which it turns over to the physician as his compensation, is not liable for the physician's malpractice, unless it was negligent in selecting or retaining him. The defendant was under no legal obligation to provide a physician and surgeon for its employees; but, having assumed to do so, it was bound to exercise reasonable care to select a competent and skillful one. It was not bound to select a physician possessing the highest degree of competency and skill, but only of the average skill of physicians in the locality in which he was to practice.

No more rigid rule is applicable in case of the employment of a physician by a company to treat its servants than is applicable in the case of the employment of fellow servants, and it is well settled in such cases that the employer's duty is not wholly discharged by the exercise of proper care in their selection in the first instance. It is bound to keep itself advised as to their continued fitness, so far as it can be accomplished by proper supervision and superintendence; but the same degree of care to keep itself informed of the continued fitness of its servants is not required of the employer as in the case of their employment.

Having selected a competent physician, the employer may rely on the presumption that his competency will continue until notice of a change. The court cannot say that it was the duty of the defendant to make inquiry of persons in the neighborhood to ascertain if the physician had continued to be a sober man, before it had received any intimation that he was drinking. It was reasonable to suppose that his professional skill would improve with practice, and the law does not recognize such general depravity in mankind as to exact of an employer ceaseless vigilance against its consequences. But evidence of the physician's general reputation for drunkenness in the community in which he practices is admissible as tending to prove that the employer knew, or should have known, of it. Yet, to constitute notice, the reputation must be so general and notorious that ignorance of it shows neglect of the employer's duty. Reputation confined to a small number of its employees is not sufficient. And when the reasons which are relied on to charge the employer with knowledge of the physician's reputation apply with equal force to show knowledge of the employee also, the negligence of the latter in not complaining is as great as that of the former in retaining the physician.

Insanity Assumed to be Hereditary

(Prewitt vs. State (Miss.), 63 So. R. 330)

The Supreme Count of Mississippi says that insanity was the sole defense in this case to a charge of assault and battery with intent to kill. After introducing evidence of the insanity of his father and other blood relatives, the accused asked two of the physicians who testified in the case "whether or not insanity is hereditary and transmissible." The court might very properly have allowed this question to be answered, though its declining so to do did not constitute a reversible error, if error, in fact, at all. That insanity is hereditary, as hereinafter explained, is a matter of common knowledge, and is therefore a fact not necessary to be proved. The court takes judicial notice of it.

The evidence of insanity among his blood relatives, which the accused had already introduced, was admissible solely on the ground that insanity is hereditary. At one time it seems to have been supposed that this fact must be proved in each case before evidence of insanity among blood relatives could be received. But the court ventures to say that no court of to-day would so hold. The fact seems now to be assumed by all of the courts and authorities without question.

To exclude facts from evidence which depend for their value on the law of heredity for the reason that such law has not been proved is, or should be, as shocking to the judicial mind as the exclusion of facts from evidence depending on the law of gravity for the reason that such law has not been proved. Heredity "is a universal law of organic life," and is defined as "that biological law by which all beings endowed with life tend to repeat themselves in their descendants."

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

Am. Assn. of Pathologists and Bacteriologists, Toronto, Apr. 10-11.
American Surgical Association, New York, April 9-11.
Med. Soc. of the State of Cal., Santa Barbara, April 14-16.
Medical Association of Georgia, Atlanta, April 14-16.
Mississippi State Medical Association, Columbus, April 14-16.
Missouri Valley Medical Society, Lincoln, Neb., Mar. 26-27.
South Carolina Medical Association, Florence, April 14-16.
Tennessee State Medical Association, Memphis, April 7-9.

FEDERATION OF STATE MEDICAL EXAMINING BOARDS OF THE UNITED STATES

Second Annual Session, Held at Chicago, Feb. 25, 1914

The President, DR. CHARLES H. COOK, Natick, Mass., in the Chair

Election of Officers

The following officers were elected: president, Dr. Charles H. Cook, Natick, Mass.; vice-president, Dr. T. A. McCann, Dayton, Ohio; secretary-treasurer, Dr. Otto V. Huffman, Albany, N. Y. Chicago was selected as the next place of meeting, in 1915.

Public Health Administration

ASST. SURG.-GEN. W. C. RUCKER, U. S. Public Health Service, Washington, D. C.: Morbidity reports, particularly of the communicable diseases, show the location of cases which constitute foci from which disease may be spread to the well. There is also a humanitarian aspect of the question. The knowledge of the occurrence of disease makes it possible to see that the sick receive proper treatment, not only from a preventive but also from a curative point of view. When physicians fail to report cases of communicable disease, it is because of ignorance, carelessness, or a desire to protect the interests of their patients. They would not be imbued by the latter desire if the general public were in thorough accord with the spirit of preventive medicine. It seems to the practical health administrator that the most important single thing which should be taught in the campaign of public health education which is now going on would be the necessity for making prompt and accurate morbidity reports. In this connection, it may be pointed out that if the measures of quarantine, disinfection and placarding are applied by the health officer with tact and charity, much of the public opposition to reports of sickness would vanish.

Compared with the returns which it brings, that price is not high. As a matter of fact, the dollar which is spent on public health administration is an investment yielding a high rate of return to the public weal. This fact, simple as it seems to those of us who have studied the question closely, has not yet permeated the public mind, and sanitary appropriations are usually dealt out with a parsimonious and begrudging hand. The remedy for this condition of affairs is the education of our citizens to the point where they will appreciate the necessity for public health work. We may lecture to them on the danger of disease, we may instruct them as to the means of its prevention, but we shall never be able to bring them to a realization of the financial side of public health administration until we are able to present an accurate credit-sheet covering our work.

Three things are necessary to efficient public health administration: (1) the man—the well-trained, well-remunerated, full-time health officer; (2) the power—the intelligent, uniform, accurate law, and the adequate appropriation; (3) the knowledge of the location and prevalence of disease, in order that it may be controlled by the cooperative effort of the general public, the medical profession and the public health administrator.

DISCUSSION

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: It is unfortunate that in this country we have never seemingly appreciated the real value of a human life. We have never appreciated that public health is a science and one that must be carried on by our very best men. The science of medicine has developed so thoroughly in the last decade along the lines of preventive medicine that we have broad-gaged scientific men who can handle these problems. The American people must awaken to a realization of the fact that men must be trained for this work, and that politics should not enter into the work of protecting the health of our people any more than it does into our courts.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: We can say that since the discovery of the tubercle bacillus in 1882, the death-rate from tuberculosis in the United States has been reduced 54 per cent. We can say that in the past ten years 200,000 lives have been saved from death from tuberculosis. Preventive medicine generally measures its success by the number of lives saved. A battle in which 20,000 lives are lost would stir the world at the time, and would fill the pages of the historian of the future. Preventive medicine in this country has averaged 20,000 lives a year saved in the last ten years. The average of human life has been increased nearly four years in the last ten years. The average of human life in the United States to-day is fifty years, and if we were to apply exactly what we know to-day and never learned anything more, the average human life in this country would be increased about fifteen years more. Are there facts more forceful than these and are not the people of the United States sufficiently intelligent to appreciate them? Since I began the practice of medicine, scarlet fever has been reduced in its death-rate from 54 per hundred thousand in the registered area to 6. Diphtheria has been reduced from 117 to 18. Typhoid fever, about which we have been so slow, has been reduced from 34 per hundred thousand to about 16 per hundred thousand. In 1880 only 17 per cent. of the entire population of the United States was included in the registered area, compared with 61 per cent. at present, and we want to make this complete. We want to obtain complete morbidity statistics and show the people their value. I think that the people will be intelligent enough to respond.

Should Not the Federation Adopt a Uniform Minimum Curriculum for Medical Schools?

DR. JOHN L. HEFFRON, Syracuse, N. Y.: The effect of such a curriculum on the medical schools is bad. Conditions are not identical throughout the country. Aside from the universal need of well-equipped physicians to care for the people, there are other and different conditions that are local and should be met. Medical schools differ in equipment and in opportunities for meeting the various demands for medical service. The enforcement of an exacting, all-time-consuming, standardized curriculum must have the effect of reducing all schools to the same dead level and of paralyzing individuality in schools. This is the evil result entailed on us by the praiseworthy effort to effect a reform against medical schools the majority of which were private joint stock corporations at the time when these efforts were begun. In our country it is probable that no better method could have been employed than the enactment in every state of a medical practice act that should protect the people from unworthy medical men and from unworthy methods of medical education.

The conclusion therefore seems inevitable that the imposition by the state or by any other authority whatsoever of a standardized rigid, time-consuming curriculum can work only evil to medical schools and to medical students. We should have a simple, straightforward statement of what are considered fundamental subjects and an outline for each, giving what are recognized as the essential principles to be mastered, and a standard by which to measure knowledge and power. With such a minimum curriculum, each college recognized by a state as worthy could offer electives in various subjects so that every student could pursue a more extended course in the particular subject which commands his greater interest. In such a way the university idea of education could be carried out.

Should the Federation of State Medical Boards of the United States promulgate such a curriculum, and have they the power to administer it? The formulation of any curriculum should be the work of men trained in the science of education. It is purely a pedagogic question. The very terms of the law by which members of the medical examining boards in most of the states are selected makes it impossible for them to be teachers. The purpose of such a law is self evident. It was thus laid down to prevent the imputation of favoritism to a particular school on the part of an examiner who should be a member of the faculty of such a school.

It is my opinion, therefore, that the cause of medical education would be forwarded if this federation should secure the cooperation of specialists in university and in medical education and, with their aid, formulate a uniform minimum curriculum for medical schools to present for adoption to the various states of the Union; and that this great federation should endeavor to secure such an administration as shall really test, by practical examinations, the knowledge of all applicants for the license to practice medicine.

DISCUSSION

Dr. John K. Scudder, Cincinnati: As this is a voluntary organization I doubt the advisability of your attempting to adopt a uniform curriculum for medical schools. The enforcement would have to lie with the individual boards, and even then within powers written into the various state medical laws. Of one thing I am firmly convinced; that if this curriculum were hard and fast and not flexible, it would defeat the very object desired, the rational education of the student, and would prove a serious detriment to the already burdened college.

The objections now to the standards laid down by the Council on Medical Education are that they are not flexible, and frequently more destructive than constructive. Dr. Heffron has delicately touched on these points, and mentioned the point of hours. The Ohio State Medical Board, on which I had the honor of serving, specified a minimum curriculum of 3,600 hours. New York specifies 3,600 hours, the Association of American Medical Colleges 4,000, but Pennsylvania specifies in the law itself 4,480 hours, and now comes California with the more absurd standard of 4,800. Scarcely a score of colleges even profess to have that amount of teaching, and I seriously doubt the advisability of 4,480 hours. It is alleged that Pennsylvania classes several colleges in List A, which do not by their catalogues schedule any such number of class hours. When I attended the Cincinnati University about twenty-five years ago, we had several courses leading to different degrees, and the flexibility of the course, as I remember it, was approximately as follows: freshman year, four major subjects specified, no options; sophomore years, three majors, one elective; junior year, two majors, two electives; senior year, a little over half elective along certain lines. If a flexible medical curriculum in some such manner as this could be adopted, I should approve the plan. I have more sympathy with the college which successfully teaches medicine than with the one posing for maximum hours. Flexibility is the key-note of my argument, and continuously holding in mind the teaching of medical students to think and not make automatons of them, which is unfortunately the trend of modern education.

Dr. J. M. Baldy, Philadelphia: Pennsylvania has no idea of adopting hard-and-fast rules in the administration of the law. The bureau unanimously agrees that flexibility is the proper and only thing, and it is the only way any law can be intelligently enforced.

President's Address

Dr. Charles H. Cook, Natick, Mass., delivered an address in which he suggested a number of measures which he thought would be useful for the federation to adopt in the conduct of its work.

The Standardization of Medical Education

Dr. Harold C. Ernst, Cambridge, Mass.: It is unfortunate that the teaching of any important branch of medicine should be under the control of a single person. It is also unfortunate that a young and ambitious worker should have no probable permanent reward held out to him in his own institution—unfortunate for him and unfortunate for the institution. There are many instances of a worker demonstrating his right to professorial rank, in which this rank should be conferred by the authorities of the place in which the worker has developed. When such rank has been conferred, the young professor should find himself among his colleagues, not his superiors. Differences in influence and effectiveness will adjust themselves.

That this position is the just one is seen in the administration of Harvard University, where it has been and is the custom to appoint as many professors—say of English—as occasion seems to require, and where there is never the slightest feeling that the rank of all these professors is not the same. That is the true university policy, and it is the policy on which a medical school must be organized if that organization is to be of a broad and flexible character.

The education of a physician is primarily an educational, not a medical question, just as the training of an engineer is primarily an educational question, not an engineering question. This does not mean that the physician and the engineer must not recognize finally the points of view of medical practice and of engineering practice, respectively, but it does mean that, though the content be in one case medical and in the other technical, the methods employed in training physician and engineer involve educational problems and educational skill.

Paulsen, describing in his book on the German universities the increased importance of the medical profession, reports with some astonishment that the number of physicians has increased with great rapidity, so that now in Germany there is one doctor for every two thousand souls, and in the large cities one for every thousand.

The desire for standardization has extended already to an unfortunate extent in the almost universal demand that a candidate for registration to practice medicine shall be the possessor of the degree of doctor of medicine. This demand ignores the fact that this degree is really of university grade—that it is not a prerequisite to the practice of medicine in the older countries, and that it should not be in this. What the supporters of such a requirement really mean is that the candidate shall have a degree in medicine, which shall be a certificate of having had proper medical training; whether it is a doctorate or not is entirely aside from the question. This is a matter of academic standing pure and simple. Think of a law that would have prevented Sir Joseph Lister from practicing in this country—if he had seen fit to come here—or even from applying for examination for a license to practice!

It is no longer invariably pursued as introductory to a trade, and it even happens that occasional students pursue its mysteries as a part of liberal education, or as introductory to a career of research. From any such point of view, which shows the true university spirit, the demand for a hospital year before conferring the medical degree would be a hardship. For the practice of medicine, the conditions are different, and it may well be that a year in a good hospital should be a prerequisite to a license to practice. How that can be accomplished in Massachusetts, for example, is a matter for wiser heads than mine to determine.

The faculty of medicine to which I have the honor to belong has taken a definite position in the matter. As a result of action elsewhere in regard to a required hospital year before granting the doctor's degree in medicine or a license to practice, a committee of that faculty was appointed to consider the addition of such requirements in our own school. After the consideration of all the facts that could be gathered, this committee reported that such a step was not advisable, a strong determining factor in the formation of this opinion being the rule of some of the most important hospitals that their interns must be graduates *in* medicine and holders of that degree.

DISCUSSION

Dr. Abraham Jacobi, New York: The standard of medical education even now should be raised so that when we send our boys out to practice among the people they will know more than preventive medicine. Not only do the people want to know about preventive medicine, but the individual patient also wants to know what that doctor has done in a similar case. He wants to know whether that or this doctor can cure him or not. This is just as important, from a practical and theoretical point of view, as to consume so much time in talking about preventive medicine which we do not put into practice.

Dr. N. P. Colwell, Chicago: Dr. Ernst refers to the decrease in the number of medical colleges since 1904, the time the Council on Medical Education was organized. This decrease means a distinct advance. Medical education is not being restricted but is being given better. The diminution from 160 down to approximately 100 medical schools has been largely due to the merging of two or more medical colleges in several cities into one stronger and better-equipped school. The decrease in the number of medical colleges has been largely brought about, therefore, through the voluntary action of the colleges themselves.

As to prescription-writing, there has been an effort made to have medical students write prescriptions for individual patients in the dispensary and to discontinue the method formerly largely used of designating certain formulas by number.

The Use of the Government Medical Services in Standardizing Medical Education

Lieut.-Col. John R. Kean, Medical Corps U. S. Army: About 1830 there began in the army the system of examinations for admission to the medical service, which has been kept up ever since, and to which, more than to any other agency has been due its efficiency and high professional standing. Examinations for promotion were begun in 1833. Of the details of these early examinations but little is known, but Surg.-Gen. Thomas Lawson in his annual report for 1838 speaks of them as follows:

> Year by year, for eighty-two years, with a few exceptions, these boards, composed of the most accomplished members of the corps, have been in operation. Between the end of the Civil War and the year 1910, 2,841 young physicians have appeared before them, of whom 562 are known to have been rejected for physical reasons. Of the remaining 2,279, 613, or nearly 26 per cent. have passed, and seventy-four have failed on their professional examination. I have not been able to ascertain the number examined prior to 1866, but it seems reasonable to guess that the number averaged not less than twenty a year, which would bring the number which appeared before these boards to a total of not less than 3,600.

The first law requiring examinations for admission in the naval medical service was in 1828, and for the Marine-Hospital Service (now the Public Health Service) in 1870.

The need of some central examining board which, while determining the competence to practice of medical graduates, may at the same time set a uniform and reasonably high standard of medical education, and confer the right to practice anywhere in the United States, has long been recognized. It was proposed in an editorial in The Journal as long ago as Jan. 11, 1902. A little later in the same year, Dr. William L. Rodman proposed such a board to the committee on National Legislation of the American Medical Association, and his report was adopted unanimously by the committee. It was also stated to be acceptable to the representatives of the state boards present at the meeting. At that time, however, the medical services of the Army and Navy did not possess their present organization, *an important feature of which* lends itself in a valuable way to this scheme.

If, therefore, a board should be appointed by the President of the United States, for the examination of officers for the Medical Reserve Corps, of a composition which would insure a high standard of requirement, and the state boards will agree to accept and license, without examination, the holders of Reserve Corps commissions, as is now done by many states for medical officers of the government services, the thing is accomplished. If the laws of any state do not at present permit of such action on the part of its examining board, it would probably not be very difficult, with the powerful assistance of the American Medical Association, to obtain the authority of law to admit to practice commissioned medical officers of the Reserve Corps.

It would not be necessary to wait for favorable action by every state, for if the scheme be begun by even a few states, the rest could be expected to come into the line as the desirability of the scheme became evident.

It would obviously be desirable that the other medical services of the national government should join the army in a plan of such importance to the profession at large.

The board should have, evidently, official members from the government service or services which will enter into the scheme, not the surgeon-generals, as my friend Dr. Rodman suggested, as these are too deeply immersed in administration duties for such work, but the officers of appropriate age, rank and attainments. I think that the American Medical Association should have a representative, selected perhaps by the Council on Medical Education, and this federation should have a representative. It should have two, if it should be deemed necessary and desirable to give our friends of the homeopathic school representation, and thereby secure a member who could conduct the examination in practice and materia medica for graduates of medical schools of that persuasion.

The details of organization and operation could be perhaps best worked out by the board itself, which could make its reports directly to the president, or to an executive committee, composed of the three surgeon-generals, whose duty it would be to obtain, through the proper channels, the commissions which would be the reward of the successful candidates.

DISCUSSION

Dr. De Witt G. Wilcox, Boston: Any physician who has given even superficial consideration to this subject will agree on the absurdity of using forty or fifty different standards for testing the ability of physicians to practice in the United States and its dependencies. The people of Maine do not require any different therapy from the people of Florida or of California. The difficulty has been to find some method by which one board could agree to pass on all of the graduates in medicine. There are constitutional difficulties in the way of such a national board, and Dr. Kean has brought before us a possible solution in the shape of an optional board which might be created out of the machinery that already exists for such examinations. One weak point in using the machinery that already exists is that the Medical Reserve Corps might give the examinations too much of a military complexion, and the question would be raised as to whether it would be broad enough in scope to examine physicians for general practice.

Dr. William L. Rodman, Philadelphia: Inasmuch as the Constitution of the United States has been amended twice recently, it would not be a difficult thing to amend it so as to establish a national examining board, and when a man has passed such a board he should be given a license or diploma which would be broad enough to permit him to practice anywhere in the United States.

What Instruction Ought Medical Colleges to Give in Pharmacology and Therapeutics?

Dr. Samuel W. Lambert, New York: There is a great amount of good in the older materia medica and certainly more good than can be found by the laboratory methods of pharmacology; but there is much that is inert and useless, and it is the duty of the school to select the good from the bad and to limit its teaching to the essential drugs. It should be the duty of an examiner to draw out from the student by presenting theoretical therapeutic problems the first mention of any therapeutic measure, or of any drug, and then to hold that student strictly responsible for an accurate knowledge only of the remedies mentioned and suggested by himself. The same rules can be applied to teaching the newer materia medica. The course of instruction in the laboratory of pharmacology should be given by men who have taken the M.D. degree and who have had hospital training in clinical medicine. The course should include a study of the effect of small doses of drugs on animals and also the toxicology of larger doses in the same way. Therapeutics should be considered not as a separate department, but as a part of the department of clinical medicine, and certain instructors should be delegated to present to the fourth-year students serving as clerks, such therapeutic problems as may arise in the course of the ward service.

What Instruction Ought Medical Colleges to Give in Pharmacology and Therapeutics? The Point of View of the State Examiner

Dr. Walter L. Bierring, Des Moines, Iowa: Considered as an index of the qualifications for medical practice, an examination in pharmacology should constitute one of the best criteria of a candidate's ability logically to apply knowledge acquired in a medical school. Pharmacology presents problems that are partly scientific and partly practical, the former being undoubtedly the effective correlation of pharmacology and therapeutics. As to the latter it must be admitted that pharmacology, or pharmacodynamics of the experimental investigation of the drug action, has played the part of a powerful and predominating useful ferment in therapeutics, which possibly has not yet reached the proper maximum of its usefulness.

Of equal vital influence to the progress of therapeutics is the standardization of drugs, for in this way unity of knowledge is established that forms an important factor in the licensure examination. In fact, no opportunity is to be omitted to emphasize the close relation that should exist between the pharmacist and the physician.

It may not be apparent to all, but there is a distinct difference in the purpose and mental attitude of the examiner and the candidate for a medical degree, and that which exists between these two persons in an examination for a certificate of licensure. The one is largely a test of knowledge of the subject in question, and the other pertains to a logical application of this knowledge in the treatment of disease. The latter injects the human element in that it presumes an experience in the treatment of patients, which unfortunately is not always the case. I am therefore strongly in favor of the additional hospital year of required medical training, and furthermore feel very strongly that the licensure examination should be deferred until this year's practical work has been satisfactorily completed. With this additional experience of closer contact with patients, the candidate will be able to approach the second examination in a much better way.

In the broader use that has been given to the term "pharmacology" there is included practically all non-surgical or nonoperative measures in the treatment of disease. From the original drug treatment it has branched out to include chemotherapy, organotherapy, serotherapy, immunotherapy, the application of various forms of physical therapy, and perhaps to all this can properly be added that of psychotherapy.

Keeping in view the real object of the licensure examination to test a candidate's ability for the practice of medicine, less consideration should be given to a knowledge of definition, forms of classification, or of general application of drugs and other remedial agencies, but more to determine his ability properly to apply his knowledge of pharmacology, the purpose to be attained with the different therapeutic measures, and the manner in which their effect is to be interpreted.

The proper application of physical therapy, the underlying principles of chemotherapy, serotherapy and immunotherapy, can readily be incorporated in questions pertaining to applicable disease conditions, thus permitting a wide range in formulating the questions, yet all with some degree of practical aspect, and thus constituting a marked improvement over some of the methods that have prevailed heretofore.

DISCUSSION

Dr. Bernard Fantus, Chicago: There is need for considerable improvement in prescription-writing. This could be secured if it were realized that prescription-writing cannot be taught by lecturing and demonstrations; that the students must be drilled in prescribing. I believe that the best results can be obtained if a course on pharmacy and prescription-writing be given before the work in pharmacology is taken up. The students should be made familiar in this course with the various classes of pharmaceutical preparations and their prescribing. When the student then enters his course in pharmacology, he is ready to write prescriptions from the very beginning, and he ought to be required to write prescriptions for each of the important drugs as they are studied, paying special attention to methods of pleasant and efficient administration. When the student finally advances to the study of therapeutics he should still be required to write prescriptions now from the point of view of the effect. If the clinical instructors will do their duty and require students to write prescriptions for the remedies needed by the patients treated in hospitals and in dispensaries, the student would leave our medical colleges well trained in prescribing.

[A general discussion followed on a model medical practice act. There was also a general discussion on credentials and the evil of the equivalent. A great many of the members took part in these discussions.]

Reciprocity

Dr. J. M. Baldy, Philadelphia: The method we have adopted has been to take each individual school and judge it on its own merits, irrespective of the fact that it is in a bad environment of faulty state legislation or poorly administered state laws. Having passed on the school and found it competent, as judged by the legal standards of Pennsylvania, as well as by the enforcement of its standards and by its finished products, we register that school and are ready to accept its graduates and endorse the license which they have received from any other state in the Union, it matters not what state, provided only that that state will do the same with the graduates of Pennsylvania schools. The Pennsylvania law requires this. We do not even ask that our estimate of Pennsylvania schools be accepted by the other state.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Meeting held Jan. 20, 1914

(Concluded from page 726)

Early Recognition and Medical Treatment of Gastric and Duodenal Ulcer

Dr. William Van Valzah Hayes: It is of the utmost importance to make the diagnosis at the earliest possible moment, and ascertain what are the factors predisposing to ulcer and correct them before the greater damage is done. Disease of the gall-bladder or bile ducts and chronic appendicitis may closely resemble ulcer and it is common to have these conditions associated. Persistent distress or pain soon after meals, or the same symptoms coming on regularly when free hydrochloric acid begins to appear in the stomach should always arouse the suspicion of ulcer. The same is true of sour belching or burning or gnawing, or if the patient awakens in the morning with gastric distress, which is relieved by taking food or an alkali. Gastric discomfort or pain of a degree to lead the patient to induce vomiting is very frequently due to ulcer.

The time of pain onset is important, though too definite statements regarding it cannot be made. Usually, if the pain comes late in the digestive period, two to four hours after the meal and is relieved by taking food or an alkali, ulcer near the pylorus, on either side, is probable. In many cases the symptoms may be slight, discomfort, belching, moderate prolongation of digestion, hypersecretion and constipation, when the diagnosis must be made by the functional examination, examination of the gastric contents and the stools together with the roentgenographic findings. Occult blood in the gastric contents, or stools, or in both, is highly significant. The thread test properly used is valuable. If the procedures mentioned are intelligently carried out, the percentage of failures in diagnosis should be small.

In the absence of acute or chronic perforation, repeated hemorrhages, progressive anemia, obstructive conditions, and suspicion of cancer, every case should receive the benefit of at least six months' medical treatment and observation before having recourse to surgery. As a rule, the following principles should be insisted on: Rest in bed for four weeks with freedom from responsibility and care. Rest should be absolute as long as there are any signs of occult blood in the stools. An ice bag should be kept on the epigastrium most of the time if hemorrhage has occurred. Abstinence from food by the stomach is desirable from two to four days if there has been marked hemorrhage or great sensitiveness over the stomach or duodenum, provided the patient is strong enough to justify the partial starvation. During this period rectal alimentation may be employed. Saline solution by means of the Murphy drip may be employed for the first twenty-four hours and then the following enemata: Fully peptonized milk, 4 to 5 ounces; glucose ½ ounce; salt, 10 to 15 grains. Beginning the day after the hemorrhage, the white of an egg in water may be given by the mouth every two hours, or the Lenhertz treatment begun. In general, a diet very low in extractives and moderate in proteids is desirable. Bland fats, such as good olive oil, fresh cream and fresh unsalted butter, diminish the acidity and have high caloric value. Duodenal feeding by a slightly modified Einhorn method has given very satisfactory results. While this form of feeding is still too new to justify over-enthusiastic statements, it seems reasonably certain that it constitutes a valuable addition to the old established methods of treatment, even though its precise field is not yet fully defined. Medicines of value in ulcer are bismuth, magnesium, nitrate of silver, tincture of belladonna, iron, Carlsbad sprudel salts, and liquid paraffin.

DISCUSSION

Dr. Max Einhorn: The application of the tube in gastric ulcer should be performed very carefully. Personally, the use of the stomach bucket seems preferable because there is no effort at all to bring it out. With regard to the thread test, I usually use the bucket, but originally I devised the use of the beads. The great advantage in the use of the bucket is that material can readily be withdrawn from the duodenum. The combined method of thread and bucket may be employed. In most instances, I introduce the bucket by having the patient swallow it, but there are some instances in which this seems difficult. Some patients say they cannot swallow the bucket. Sometimes there is a spasm present, the water enters the stomach, but the bucket remains behind.

Dr. Edward Wallace Lee: More attention should be paid to the study of stomach conditions, especially to physical examinations; ulcerative tendency could then be recognized and even prevented. Dyspepsia is too often treated without looking for the cause.

Dr. Bennett Sheldon Beach: The thread test is extremely useful. It should precede the use of stomach tubes and other methods. The test for occult blood should be made before examinations which may be of a traumatic nature. It is dangerous to aspirate by means of the bulb, and one should be careful in withdrawing it, lest he may cause erosions.

Aim and Scope of the Psychopathic Clinic in Connection with the New York Public Schools

Dr. L. Pierce Clark: For years the psychiatrist, neuriatrist and educator have demanded more knowledge of the innate trends of manner, conduct and temperament of normal and abnormal child life. The school is the proper place for such studies, and all public schools in the large cities should have a department for the clinical study of the frank nervous and mental disorders of children. The schools are in close touch with child life and with the home. The school has the training equipment, the personnel and the financial support to adequately meet the issues concerned. When properly equipped and organized for the work, it can make clear the nature and degree of retardation and perversion of mental development of the child. The schools should call to their aid experienced physicians, sociologists, psychologists, and educators to unravel this intricate problem of child study. We must study the beginning of mental disorder in order that the best means of preventing the nervous and psychotic disorders of adult life may be forthcoming.

In accordance with these ideas, a group of us last October induced the Board of Education to form such a clinic under the direction of the Bureau of Ungraded Classes, since which date, two experienced neuriatrists and psychiatrists, and four social workers have been employed, analyzing the three thousand children in the two hundred special classes for the mentally defective, and more of such workers are being added as the organization progresses. One of the consulting staff is in charge of the central clinic at the Board of Education every afternoon to examine in minutest detail the more difficult or borderline cases. The board hopes soon to have an observation school and a resident school for more prolonged and special treatment of the most stubborn cases. Careful case records are being kept and in time scientific and public information will be given out. The idiot and imbecile group will be forwarded to state institutional care as rapidly as provision can be arranged for them in colonies. By doing so the school will give its greatest attention and study to the moron, the neurotic, and the delinquent child.

DISCUSSION

Dr. August Hoch: For years I have been interested in the study of the personality that comes to the patient after a break-down; it is especially interesting to learn what kind of people they are, and what traits they possessed that made them go in the wrong direction. Most of these cases come too late for any sort of adjustment. There is an increasing appreciation of the importance of constitutional disorders in psychosis, as well as in neurosis. The early beginnings in these cases are what is interesting.

Dr. Foster Kennedy: A few years ago the neuriatrist was directing his energies to solving the problems and questions of structure which are mainly mechanical. There has been a reversion from that point of view and now we study the human being as a psychic. From the trends we are following now it is possible that we will free ourselves from such catch-words as "hypnotic suggestion," "neurasthenia," etc. The study of the psychopathic child will enable us to differentiate the neurasthenic types; the defective children would resolve themselves into several groups and it would then be possible to apply the proper remedy. In children who are defective in their motorium, it would be possible to prescribe one kind of education and in other defects a different kind of training.

Dr. L. Pierce Clark: There are types of temperament back of the precocious emotions in the infantile life in ticeurs and the disturbance of the ambivalency of equality of emotional attachment to each parent is in greater part due to the inheritance of a certain type of temperament, which, because of its strong determination to the hate polarity, makes one believe that it is really atavistic in component. It seems to be a predominant trait that many such individuals have inherited, but which fortunately is eliminated in most individuals. The whole conception of the tics as I have presented it, may be differently formulated in the future, but I am confident that the essential foundation of the concept will remain.

Women and Patent Medicines.—Women are by nature credulous, an excellent provision provided they do not fall into the hands of the unscrupulous, who trade on their credulity. The true quack is always unscrupulous. It is part of the definition of him. Therefore in all matters of private health, let my readers carefully avoid quacks and advertised remedies. The benefit that these remedies effect is nearly always strictly limited to the dispensers of them. The patient, if really ill, merely postpones the doctor's visit, and, if only temporarily indisposed, will get well without quacks.—Wrench: The Healthy Marriage.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

February, LXIX, No. 434, pp. 205-408

1 *Roentgen Rays, Radium and Mesothorium in Treatment of Uterine Fibroids and Malignant Tumors. Krönig.
2 Umbilical Structures of New-Born. A. W. Meyer, Palo Alto, Cal.
3 Pituitary Extract in Obstetrics. H. E. Lindeman, New York.
4 *Diagnosis and Treatment of Puerperal Insanity. R. R. Huggins, Pittsburgh.
5 Surgical Shock as Factor in Obstetrical Operations. A. L. McDonald, Duluth, Minn.
6 Ideal Obstetric Out-Patient Clinic. F. S. Newell, Boston.
7 Clinical Aspects of Ruptured Tubal Pregnancy. R. Y. Sullivan, Washington, D. C.
8 Diphtheritic Vaginitis. A. L. Goodman, New York.
9 Later Operative Technic in Treatment of Cancer, with Special Reference to Cancer of Breast and Uterus. M. I. Rosenthal, Ft. Wayne, Ind.
10 Relationship Existing between Mechanism and Management of Third Stage of Labor. J. R. Freeland, Pittsburgh.
11 Problem of Major Pelvic Hernia in Female. F. D. Gray, Jersey City, N. J.
12 *Blocking the Sympathetic to Prevent Shock in Combined Operation for Cancer of Rectum or Recto-Sigmoidal Juncture. J. M. Lynch, New York.
13 Pubiotomy Versus Cesarean Section in Neglected Cases. A. J. Rongy, New York.
14 Uterine Hemorrhage Associated with Hypertrophy and Sclerosis of Uterine Vessels. L. W. Smith, Pittsburgh.
15 Prenatal Care. H. Schwarz, St. Louis.
16 Toxic Action of Pituitary Extract on Newborn, Apparently Through Its Mother's Milk. H. B. Sheffield, New York.
17 Anatomy of Female Pelvis and Its Bearing on Procidentia. D. Hadden, Oakland, Cal.

1. **Roentgen Rays.**—The following *resumé* is given by Krönig of his observations: In deeply seated carcinomas with metastases we are, in our experience, still as much in the dark as we were before, in spite of Roentgen-ray and mesothorium treatment. In cases of carcinomas which have advanced beyond the primary focus and which have spread into neighboring connective and glandular tissue, cases which may in general be considered to be inoperable, we may consider a small percentage to be cured. In the operable carcinomas the results are still the most favorable. But here too we must deplore the short time during which the cases have been under observation. The longest observed case in our series was that of a large carcinoma of the abdominal wall, and even that only dates back two years. We must, therefore, not expect too much of Roentgen-ray and mesothorium treatment in malignant tumors. If however, a relatively large percentage of operable cases remain permanently cured the success of the treatment would still be sufficiently great, for we know that especially in operations for carcinoma of the genital organs we find a high mortality rate amounting in the case of operation for carcinoma of the cervix even to 25 per cent.

4. **Treatment of Puerperal Insanity.**—That the treatment should be directed toward prevention is the point made by Huggins. The first step is to remember the possibility of this complication in a woman having an unstable mental organization. One cannot hope to anticipate the development of an attack of puerperal insanity in every instance; but the family history, careful study of the previous history of the patient, will often give a clue which should lead to cautious treatment. Careful observation and treatment may lead to results just as valuable in preventing nervous disturbances not accompanied by loss of reason. In all women who manifest unusual nervous symptoms during pregnancy, rest, absolute rest, is the treatment *par excellence*. This is indicated in the presence of so-called hyperthyroidism especially. Elimination should be kept at the highest possible standard throughout pregnancy. If a patient gives a history of previous attacks either during pregnancy, or at other times, the advisability of a continuation of the pregnancy must depend on the severity of symptoms during the attack and the general condition of the patient at the time. If there has been one severe attack, the patient should not be allowed to become pregnant the second time. If this occurs, Huggins believes the uterus should be emptied as soon as any sign of extreme nervousness begins which does not respond to elimination and absolute rest. It will not often be necessary, but it offers one of the best indications for the termination of pregnancy. A woman having had one severe attack with recovery should have the privilege of sterilization by the removal of the fallopian tubes. In the milder forms, where the symptoms have not been severe, careful treatment will prevent the development of more serious conditions.

12. **Blocking the Sympathetic.**—The patient, after having been prepared for operation in the usual manner, is given $\frac{1}{4}$ grain morphin and $\frac{1}{100}$ grain hyoscin unless for some reason this is contra-indicated, and is then placed in the left Sims position. The safest method to adopt, especially by those who are not familiar with this procedure, is to make an incision a little in front of the sacrococcygeal joint, and, if necessary, extend it until an opening is found. This can be done under local anesthesia. The point at which the needle is to be inserted is first decided on. This can be determined by following the sacral spinous processes until they are found lacking. Slightly above this point will be found the opening of the canal. If, as happens in most cases, there is a bifid spine, the ridges can easily be felt, except in very fat subjects. If the canal opens near the sacrococcygeal joint this point is selected. Under local anesthesia the needle is inserted in the median line, at an angle of about 15 degrees until the bone is reached. It is then passed close to the bone until it has been entirely inserted for about 1 inch. When the needle is found to be in the canal, about 4 c.c. of the same solution is deposited on each side. After this has been done the trocar is reinserted in order to prevent the escape of fluid, and the needle, with the trocar, allowed to remain in position until anesthesia is established. The reason for this is because if the anesthesia is not established after fifteen minutes, it may be necessary to inject 1 or 2 c.c. more, and this is made much simpler if the needle has been left in place. It is important for the fluid to be absolutely sterile and freshly prepared; also of the same specific gravity as the blood in order that it may be readily absorbed. After this has been accomplished, the patient is placed in the lithotomy position, and the abdomen painted with tincture of iodin, this afterward being washed off with alcohol. The abdomen is then opened. The next step is to block off all the sympathetic nerves within the triangular space bounded by the common iliac. The technic is as follows: An incision is made in the mesentery on one side at the apex of the common iliac arteries, slightly above the bifurcation of the aorta. The needle is passed in through this incision, and all the space between these arteries is infiltrated with a solution of 1 per cent. novocain. If necessary, the inferior mesenteric plexus can also be treated in the same manner. After this has been accomplished, the sympathetic nervous system of the entire hypogastric plexus is blocked. By means of a scissors curved on the flat, the mesosigmoid is slit as far down as the bladder, or uterus, as the case may be, and continued around on the anterior surface of the rectum to the other side, thus separating the rectum from the bladder or uterus. When this has been done, the sigmoidal artery is double tied close to its root. Afterward, the superior hemorrhoidal artery is double tied, and with a scissors curved on the flat, scoop out all the fat and glands between the folds of the proximal mesosigmoid—from the promontory of the sacrum to the levator ani muscle. After the middle hemorrhoidal artery has been clamped, both leaves of the mesentery are cut, down to the levator ani muscle. The rectum can now be readily separated from the prostate and urethra as far down as the levator ani muscle. The tumor and sigmoid are then packed down in the pelvis, and the peritoneum dissected up from the side of the pelvis and attached to the intestines, thus making a new diaphragm about 2 inches higher than the former peritoneal attachment. All raw surfaces are covered by attaching the peritoneum to the gut, either by a continuous catgut suture, or by several interrupted sutures, and the abdomen closed in the usual manner. The operation is finished from below.

American Journal of Public Health, Boston

January, IV, No. 1, pp. 1-90

18 Insurance Companies and Public Health Activities. L. K. Frankel, Colorado Springs, Colo.
19 *Why Are Modern Infectious Diseases Mild? H. W. Hill, London, Ont.
20 *Present Status of Pasteurization. S. H. Ayers, Colorado Springs, Colo.
21 What Good Housing Means. J. Ihlder, Colorado Springs, Colo.
22 *Drug Addictions, a Public Health Problem. C. E. Terry, Jacksonville, Fla.
23 Disposal of Manure. P. M. Hall, Minneapolis, Minn.
24 Control of Communicable Diseases. P. S. Schenck, Norfolk, Va.
25 Dirt Sediment Testing—Factor in Obtaining Clean Milk. M. C. Schroeder, New York.
26 Modern Health Administration: An Analysis. O. Dowling, Shreveport, La.
27 Counting of Bacteria on Surfaces. A. Gehrmann, Chicago.

19. **Why Are Modern Infectious Diseases Mild?**—The mildness of modern infectious diseases is believed by Hill to be due to the lessened virulence, smaller stock and reduced distribution of the streptococci and staphylococci formerly bred in hospitals. He urges that public health men should campaign for medical asepsis as the surgeons did formerly for surgical asepsis; and not only in contagious hospitals, handling the specific infections, but also wherever septic cases are cared for.

20. **Present Status of Pasteurization.**—Regulations relating to pasteurized milk, Ayers says, should be based only on accurate scientific data. It is often the practice to demand a bacterial reduction of 99 per cent. during pasteurization. It is an easy matter to destroy 99 per cent. of the bacteria in milk when the raw milk contains large numbers. It is often impossible, however, when raw milk contains around 100,000 bacteria per cubic centimeter to destroy 99 per cent. on account of heat-resistant bacteria which are not necessarily spore formers. In a large number of experiments in which Ayers pasteurized milk under exact laboratory conditions, where no reinfection was possible, in one sample only 17 per cent. of the bacteria were destroyed. He states that often 99 per cent. of the bacteria may be destroyed and yet the pasteurized milk may still contain hundreds of thousands, while in other cases in which the milk contains only tens of thousands the percentage reduction may only have been from 80 to 90 per cent. In the control of pasteurization it is essential that the proper temperature be used and that the process is so performed that no reinfection takes place. This can only be accomplished by direct supervision of milk plants by trained men who have authority to carry on such supervision. It is not the idea even of the most ardent exponents of pasteurization that any grade of milk should be pasteurized and consumed and that farm inspection can be eliminated. Filthy milk is not fit for human food under any condition and need not be tolerated. Ayers emphasizes that in the present status of pasteurization the ideal to be achieved is to use the process not to make a dirty milk a clean milk but to make a clean milk a safe milk.

22. **Drug Addictions.**—The points Terry makes are, first, the necessity of securing accurate data in each community as to the prevalence of drug habits. The only persons who really know them are the druggists who cater to this trade and the users themselves. Obviously neither party will supply the information unbidden. A survey of the true conditions should be conducted and the findings made a matter of public record and information. Not improbably some better method than Terry's will be devised; one less burdensome is certainly desirable in large communities. Second, whatever corrective legislation be enacted must take full cognizance of the practicing physician as a factor of prime importance in the formation of drug users and not content itself with restrictions thrown around the druggist. Third, any effective prohibitive legislation must provide for the tree treatment of existing users. To deprive them of their supply alone would be inhuman; private institutional treatment is beyond the reach of all but comparatively few, a circumstance probably more fortunate than otherwise, in view of the methods of most such places, and they should be considered a public charge for at least one rational course of treatment.

Archives of Internal Medicine, Chicago

February, XIII, No. 2, pp. 177-348

28 *Circulation in Man: Blood-Flow in Hands and Feet in Certain Diseased Conditions of Blood-Vessels or of Their Venous Mechanism. G. N. Stewart, Cleveland.
29 *Chronic Gastric Ulcer and Its Relation to Gastric Carcinoma. W. C. MacCarty and A. C. Broders, Rochester, Minn.
30 *Non-Protein Nitrogenous Constituents of Blood in Chronic Vascular Nephritis (Arteriosclerosis) as Influenced by Level of Protein Metabolism. O. Folin, W. Denis and M. Seymour, Boston.
31 *Urobilin: Its Clinical Significance. R. L. Wilbur and T. Addis, San Francisco.
32 *Effect of Heat on Blood-Pressure. L. H. Newburgh and C. H. Lawrence, Boston.
33 *Paroxysmal Auricular Fibrillation. G. C. Robinson, St. Louis.
34 Mutual Action of Certain Digestive Ferments. J. H. Long and G. W. Muhleman, Chicago.

28. **Blood-Flow in Hands and Feet.**—In cases with marked arteriosclerosis Stewart found that the blood-flow in the hands is smaller and the contralateral vasomotor reflexes less pronounced than normal. In cases of thoracic aneurysm the flow in the hands may be normal. Where it is subnormal there is no evidence, apart from a unilateral deficiency in some cases due to the pressure of the aneurysm, that the existence of the aneurysm as such has any influence in diminishing the flow, the diminished flow being associated with coexisting pathologic conditions (myocardial changes, valvular lesions). A great difference in the form of the pulse-wave in the two radials associated with thoracic aneurysm does not necessarily indicate a difference in the flow through the hands. The hand flows may be identical when the sphygmograms from the radials on the two sides are very different. In three cases of Raynaud's disease the hand flows were subnormal even in the absence of an actual attack, in the more advanced cases very much below the normal. An abnormally great contralateral reflex vasoconstriction to cold seems to characterize the earlier stages of Raynaud's malady. When it has existed for a long time and gangrene has occurred, the vasomotor reactions indicate the existence of anatomic changes in the vessels, which do not permit vasomotor reflexes as intense as at first.

29. **Chronic Gastric Ulcer.**—Of 684 specimens studied by McCarty and Broders and which were either excised or resected from the stomach, 191 were chronic ulcers or ulcers in which no histologic evidence of carcinoma was present. There were 472 specimens which presented the characteristics of simple ulcer plus the presence of carcinoma and twenty-one specimens of ulcer in which the presence of cancer was doubtful. Some of the authors' conclusions are as follows: Single and multiple chronic ulcerations occur in the stomach. They vary widely in size. The characteristics of simple chronic gastric ulcers consist of excavations in the wall of the stomach, and these excavations may have the mucosa, muscularis mucosae, submucosa, musculature, subserosa or perigastric structures for their bases, depending on their depth. The excavations may be wide and shallow or narrow and deep. The mucosa of the borders of gastric ulcers may gradually recede from the base or overhang the base. The epithelium of the mucosa, which is the most natural source of carcinoma, may be normal (differentiated), hyperplastic (partially differentiated) or irregularly hyperplastic and migratory (extra glandular or in the stroma). The bases of chronic gastric ulcers consist of scar tissue which radiates usually from the center of the ulcer or is perpendicular to the plane of the coats of the stomach. Usually the surface of the base is composed of necrotic tissue which is infiltrated with lymphocytes. Carcinomatous cells occur in the lower parts of the mucosa and in the immediate submucosa without their being present in the base.

30. **Non-Protein Nitrogenous Constituents of Blood in Chronic Vascular Nephritis.**—The chief purpose of this investigation was to determine the extent to which it is possible by means of diet to vary, particularly to reduce, the waste nitrogen in the blood of such nephritis and incidentally determine whether there is any relationship between the blood-pressure and the accumulations of nitrogenous waste products in the blood. The subjects of these experiments were inmates of an institution maintained for the accommodation of indigent individuals. They were selected mainly on the basis of

abnormally high blood-pressures, and were removed from the institute and placed in a special ward. It would seem from the results as though the direct determination of the non-protein nitrogen (and urea) in the blood furnishes a more reliable guide to what might be called the protein tolerance of patients than can be obtained from any "direct" test of kidney efficiency, for of all tests yet devised for this purpose the phenolsulphonephthalein test is admittedly the best.

31. **Urobilin.**—The intestinal formation of urobilin from the decomposition of bile present within the bowel is held by Wilbur and Addis to be the usual mode of origin. In complete closure of the common duct due to carcinoma, for instance, there is usually absence of urobilin from the urine, bile and stools. There is evidence that the diseased liver may originate urobilin either directly as a product of its cells, or indirectly from decomposition of bilirubin within the bile passages. Thus, patients in whom no bile is reaching the intestine, may nevertheless show urobilin in large amount in the bile, and to some extent even in the urine and stools if the liver itself is diseased or functionally deficient. The urobilin in the urine and stools of such cases must be due to excretion from the blood of urobilin absorbed from the liver. Under abnormal conditions in the liver, formation of bilirubin from the absorbed urobilin from the intestine may fail, and further there may be a reduction of bilirubin to urobilin in the liver itself, a reversal of the normal process. Under these circumstances, the accumulated urobilin in the liver will be absorbed by the blood-stream and excreted in the urine.

An increased quantity of urobilin in the stools indicates increased blood destruction, and there is a close association between increase of urobilin in the urine and disturbance of liver function. Urobilinuria is of marked value as evidence of a definite pathologic change in the enlarged liver of alcoholic persons and occurs almost constantly in the hypertrophic stage of hepatic cirrhosis. Estimations of urobilin in the urine are of value in judging the amount of damage done to the liver parenchyma by chronic passive congestion. Hence, a marked increase of it is of ominous prognostic significance in cardiac decompensation. Urobilinuria is absent or insignificant in cases of obstructive jaundice. The great increase of urobilin in the stools and the urobilinuria which occurs in severe cases of malaria is of diagnostic importance in obscure febrile conditions. By means of urobilin estimations in the stools and urine, those forms of anemia associated with an increased blood destruction may be differentiated. A slight increase of urobilin with additional amounts at the time of resolution does not indicate a severe damage of the liver parenchyma in this disease. It is probably due to a clogging of the liver with the products of resolution and absorbed hemoglobin from the affected lung. Except in those cases in which there is practically a complete disappearance of urobilin from the excretions, due to an obstruction of the common duct from carcinoma, the authors have not found its estimation in carcinomatous cases to be of evident clinical value.

In infectious processes causing parenchymatous changes in the liver or accompanied by hemolysis, urobilin estimations are of definite value in estimating both of these factors in any given case. The majority of measles cases present urobilinuria in excess, but, as might be expected, the amount is less and the duration shorter than in scarlet fever with its more definite damage to the hepatic cells. Marked urobilinuria is indicative of pathologic change in the liver in the stasis of decompensation. Severe nephritis of various types, even in the presence of increased production of urobilin, may prevent definite urobilinuria. Large amounts of urobilin in the urine may be taken as indirect evidence of a certain degree of efficiency in the renal epithelium.

32. **Effect of Heat on Blood-Pressure.**—The effect of increased body temperature, in the absence of infection, was studied by Newburgh and Lawrence in order that its importance as a factor in causing the lowered blood-pressure of infection might be determined. They found that in lower animals degrees of hyperthermia not greater than those encountered in infections are sufficient to cause marked hypotension. The increased body temperature of infection is a potent factor in the production of the lowered blood-pressure which occurs in such conditions. The hyperthermia may be the entire cause of such hypotension.

33. **Paroxysmal Auricular Fibrillation.**—A case is reported by Robinson in which transient attacks of auricular fibrillation were observed and recorded by electrocardiograms. These attacks had apparently occurred over a period of twelve years, and auricular fibrillation became permanent while under observation. No definite cause could be discovered as initiating the attacks. No definite relation could be established between changes in blood-pressure, which was always abnormally high and variable, and the changes in the cardiac mechanism. The heart was strikingly susceptible to pressure over each vagus nerve, both during fibrillation and during the normal cardiac activity. This abnormality may be another expression of the changes causing auricular fibrillation. Electrocardiographic records of these vagus effects were obtained.

The heart of the patient gave no signs of an anatomic lesion, but arterial sclerosis, a frequent accompaniment of auricular fibrillation, was present. The presence of this lesion and the high, inconstant blood-pressure suggest the possibility that changes in the cardiac blood-supply may have been the underlying causative factor in this case. Other cases showing attacks of auricular fibrillation occurring over a period of years have been reported in which high blood-pressure and arterial sclerosis were prominent features. These cases seem closely allied to paroxysmal tachycardia, and although the auricular fibrillation tends to become permanent, the prognosis for them is not necessarily so grave as that which is given in ordinary cases of auricular fibrillation with outspoken cardiac lesions.

Boston Medical and Surgical Journal

February 12, CLXX, No. 7, pp. 221-260

35 *Peptic Ulcers. C. Graham, Rochester, Minn.
36 Certain Phases of Psychoneuroses and Their Possible Trend. G. L. Walton, Boston.
37 Suggestive Treatment in Diseases of Childhood. W. W. Howell, Boston.
38 *Leprosy; Pulse as Possible Indicator of Progress of Disease. J. A. Honelj, Penikese, Mass.
39 Ideal Stasis. H. W. Baker and D. V. Baker, Boston.

35. **Peptic Ulcers.**—Of all the patients with ulcer operated on in the Mayo Clinic and analyzed by Graham, during the years 1906-1911 inclusive, 76 per cent. were males and 24 per cent. were females. Of the males 70 per cent. of all ulcers were duodenal or involved the duodenum. Of the females, 60 per cent. of all ulcers were duodenal or involved it.

Out of a total of 567 cases of duodenal ulcer operated on during a period of six years (1906 to 1911), information has been received concerning 438. The classified results of these data are as follows: 307 or 70 per cent. cured, 79 or 18 per cent. much improved, 40 or 9 per cent. fair, and 12 or 3 per cent. unimproved. A percentage therefore of 88 were cured or much improved. In 440 of the cases, the ulcer was confined to the duodenum. Of these 337 were heard from: 70 per cent. were cured, 16 per cent. much improved, 11 per cent. fair, and 3 per cent. not improved. In the remaining 127 cases, the ulcer extended to or involved the pylorus, and of these 72 per cent. were cured, 24 per cent. much improved, 3 per cent. fair, and 1 per cent. unimproved. That is, 86 per cent. of the former were cured or had made satisfactory improvement, whereas, in the latter group, in which the lesion was more extensive, 96 per cent. were cured or much improved. There were 249 cases of gastric ulcer and reports were received from 162. These were grouped according to their situation: (1) 52 in or at the pylorus (pyloric ulcer), and (2) 197 in other parts of the stomach (principally the lesser curvature). Taken collectively, 95 or 59 per cent. of this series were cured, 35 or 22 per cent. were much improved, 21 or 13 per cent. fair improvement and 11 or 7 per cent. unimproved. Therefore, 80 per cent. were either cured or much improved, 93 per cent. were benefited and 7 per cent. not improved.

Pyloric obstruction to a variable degree occurred in 198 or 34 per cent. of the 576 cases of duodenal ulcer. Gastric analyses showed food remnants in varying amounts after 12 hours in 100 cases or 50 per cent. Reports were received from 163 patients. Nine had died since the operation. Ninety-four per cent. of the remainder were cured or greatly improved.

In 197 of the cases of gastric ulcer, obstruction was present in 78, or 39 per cent. Food remnants were noted in 58, or 71 per cent. Thirteen patients had died since operation. Ninety-two per cent. of the remainder were cured or greatly improved.

In the series of duodenal ulcers, 106, or 19 per cent. of patients gave a history of hemorrhage preceding operation. Thirty-one patients had hemorrhage of variable degree following the operation, but only 18 of these had hemorrhage prior to operation. Therefore there was hemorrhage in 13 cases following operation in which there was no history of preoperative bleeding. In these the hemorrhage occurred some time after operation and was severe in only a small percentage. Out of a total of 108 patients, 94, or 88 per cent., had a gastrojejunostomy performed, only 4 per cent. had excision or infolding of the ulcer in addition to gastrojejunostomy. Excision or pyloroplasty was done in 8 cases, or 8 per cent. Three of the patients had postoperative hemorrhage in which excision or infolding had been done. Forty-eight, or 23 per cent. of patients with gastric ulcer had hemorrhage prior to operation. Eight patients, or 13 per cent., had postoperative hemorrhage and of this group only three gave a history of hemorrhage prior to operation. Thus in 5 instances there was bleeding in varying amounts following operation in which there was no pre-operative history of hemorrhage. Gastrojejunostomy was the operation of choice in 48 per cent. and excision or infolding of the ulcer in 80 per cent. Excision alone, pyloroplasty or resection with or without gastrojejunostomy, was the operation of choice in 48 per cent. Gastrojejunostomy alone was effective in preventing recurrence of all cases which gave a history of hemorrhage prior to operation. The coexistence of disease in the appendix (16 per cent.) or gall-bladder (7 per cent.) was noted and corrected in 11 per cent. of all cases of duodenal ulcer. In the group of gastric ulcers coincident disease of the appendix (14 per cent.) or gall-bladder (5 per cent.) was present in 9 per cent. In a considerable number of cases, operation was necessary on both organs in addition to the ulcer, with favorable end-results.

38. **Leprosy.**—In the morning the pulse-rate is higher than at evening; often markedly so. That this condition is not due to the greater morning activity of the patient or to atmospheric changes has already been determined by Honeij. Great care has been taken in the making of these records, and as far as possible, surrounding conditions were alike (morning and evening): An enforced rest of half an hour previous to taking the pulse and various precautions were observed and controls made to exclude errors. To exclude thermometer faults, all thermometers were compared and adjusted. The patients were at all times under the supervision of a nurse.

This clinical observation was carried out with sixteen patients, during the year 1913. This heretofore undescribed phenomenon occurs in the majority of cases, and especially in those patients who are in an advanced, active stage of the disease. The same condition is present during febrile disturbances. Honeij considers the change in morning pulse-rate as an index to the condition of the patient. In analyzing the result of this work and the frequency of the occurrence of this phenomenon for five months, the following facts have been obtained by Honeij: In the six patients who present this change in more than three-fourths of the time noted, one has died, four are in the most advanced stages, and one is an exception, being an anesthetic case. Three cases demonstrate the change noted in more than one-half of this period. In the second of these patients there is a marked increase agreeing with the general condition, during the last three months and in the third during the last two months. In the other case there is a marked decrease in the last two months agreeing most strikingly with the recovery of the patient from a prolonged and serious condition. Three cases show this change during more than one-fourth of the time, and in two of these cases there is still greater increase during October and November. Clinically these patients are in an advanced stage. Four cases, all in the early or less serious stage of the disease gave negative results during July, August, September, and with one exception during October and November.

California State Journal of Medicine, San Francisco

February, XII, No. 2, pp. 45-86

40 Plea for Immediate Operation of Fractures. C. G. Levison, San Francisco.
41 Bernard Treatment of Poliomyelitis. D. H. Moulton, Chico.
42 Surgical Complications, Treatment and Preventions. C. P. Thomas, Los Angeles.
43 Congenital Dislocation of Hip and Extensive Skeletal Tuberculosis. H. M. Sherman, San Francisco.
44 Epidemiology and Control of Hydrophobia. W. A. Sawyer, San Francisco.
45 Positive Reading Manometer for Therapeutic Pneumothorax. E. Von Adelung, Oakland.

Cleveland Medical Journal

February, XIII, No. 2, pp. 81-140

46 *Repeated Cesarean Section. A. B. Davis, New York.
47 Treatment of Carcinoma of Female Genitals with Mesothorium. J. J. Thomas, Cleveland.
48 *Pain Distribution in Diaphragmatic Pleurisy. R. Dexter, Cleveland.

46. **Repeated Cesarean Section.**—Davis has performed repeated cesarean operations in thirty-three cases. Twenty-two the second time, eight the third time and in one case each, the third, fourth, fifth and sixth time. Contracted pelvis in some form was the indication for the operation in each case. The uterine scar was strong and firm in twenty-three cases. In four cases it could not be found. In three cases it was thinned in places and of irregular thickness. There was partial rupture of the scar in two cases. In one of these two the rupture extended downward to the left, lacerating through the thinned out lower uterine segment. This patient was sterilized. Both mothers and their infants made good recovery. The third patient was brought to the hospital in a condition of severe shock, with child, placenta and much blood free in the abdominal cavity and the uterus ruptured throughout the entire length of the former cesarean wound. The child was dead and the mother died in twelve hours after a quick operation repairing the rupture. Attention is called to the fact that all three of these patients had been in active labor for many hours before coming to the hospital. Early cesarean section at or just before the onset of labor would have prevented these uterine ruptures.

48. **Pain Distribution in Diaphragmatic Pleurisy.**—While the majority of the cases of diaphragmatic pleurisy will, in all probability, be associated with involvement of the base of the lung, Dexter claims that there are a certain number in which no such involvement can be demonstrated. In these cases the distribution of the pain toward the abdomen may lead to a diagnosis of an acute condition in the upper abdomen. It is in this class of cases that the recognition of pain and tenderness in the neck region will materially help in the differential diagnosis. With inflammation of the central portion of the diaphragm, one may expect the pain to be referred to the region of the neck, while if the outer edge of the diaphragm be irritated the pain will be referred along the dorsal segments to the abdomen.

Iowa State Medical Society Journal, Clinton

February, III, No. 8, pp. 467-546

49 Brain Injury, Its Results. G. Kessel, Cresco.
50 Glaucoma. W. W. Pearson, Des Moines.
51 Care and Treatment of Tubercular Insane. R. L. Russell, Cherokee.
52 Transverse Abdominal Incision for Pelvic Surgery in Female. J. G. Davis, Des Moines.
53 Newer Treatment of Fractures. W. W. Bowen, Ft. Dodge.
54 Physical Defects of Mentally Deficient. F. P. Lierle, Marshalltown.
55 Electrical Treatment of Female Pelvic Diseases. G. H. Cutler, Cedar Falls.
56 Epilepsy. W. A. Bryan, Cherokee.
57 Treatment of Dacryocystitis. F. W. Dean, Council Bluffs.
58 Anesthetics, Anesthesia and the Anesthetist. G. T. McCauliff, Webster City.

Journal of Outdoor Life, New York

February, XI, No. 2, pp. 33-63

59 Food and Tuberculosis. F. H. Heise, Trudeau, N. Y.
60 Baths and Disease: Problem in Rural Districts. D. B. Armstrong, New York.
61 Hints and Helps for Tuberculosis Patients. C. L. Minor, Asheville, N. C.

The Lancet-Clinic, Cincinnati

February 14, CXI, No. 7, pp. 190-206

62 Clinical Examination of Feces. C. L. Overlander, Boston.
63 Endocarditis with Special Reference to Its Etiology as Shown by Specimens. R. H. Babcock, Chicago.
64 Functional Testing of Cardiac Powers. C. S. Williamson, Chicago.

Laryngoscope, St. Louis

January, XXIV, No. 1, pp. 1-80

65 *Case of Purpura Hemorrhagica. M. A. Goldstein, St. Louis.
66 Some Serious Eye Conditions the Result of Intranasal and Nasal Accessory Sinus Disease. J. A. Stucky, Lexington, Ky.
67 Brain Infection from Sinus Disease. W. Freudenthal, New York.
68 Hypertrophied Tonsils Interfering with Action of Palate and Causing Defective Speech. G. Hudson-Makuen, Philadelphia.
69 Acute Phlegmonous Epiglottiditis. M. D. Lederman, New York.
70 Use of Electro-Magnets in Extraction of Metallic Bodies from Trachea and Bronchi, with Report of Cases. S. Iglauer, Cincinnati.
71 Violet Ray and Ozone of Use in Nose, Throat and Ear Conditions. K. W. Baldwin, Philadelphia.
72 Skull of Aborigines: Specimen of Temporal Bone. T. J. Harris, New York.
73 Brain Explorer and Two Modifications of Allport's Speculum. H. Gifford, Omaha, Neb.
74 Instrument for Separating Vocal Cords and Opening Mouth of Esophagus. R. C. Lynch, New Orleans.
75 La Force Hemostat Tonsillectome. B. D. La Force, Ottumwa, Iowa.

65. **Case of Purpura Hemorrhagica.**—The factors of unusual interest in Goldstein's case from a laryngologic point of view were the localization of unusual and sharply marked purpuric blotches in the mouth and buccal cavity, spontaneous bleeding from the nose and gums as possible etiologic factors, the apparent ineffectiveness of internal therapy until the injection of diphtheritic serum had been made. All of the areas of pigmentation, whether in the mucosa or skin of body and extremities appeared on the left side. In the mouth and buccal cavity this intense pigmentation was outlined by a sharp straight line to the vertical edge of the median raphe in the hard and soft palate and the frenum in the gums of the lower jaw. The deepest coloration of bluish-red appeared over the hard palate corresponding to the area over the floor of the nose; Goldstein suggests that this might, perhaps, be associated with the original pathology in the alar wall of the nose and nasal wall and floor of antrum. Of all the therapeutic measures carried out in the conduct of this case Goldstein believes that the only effective agent utilized was the injection of two tubes (10 c.c. each) of anti-diphtheric serum. Thirty-six hours after injection of the serum all packings were removed from the nose and very little oozing followed.

Maine Medical Association Journal, Portland

February, IV, No. 7, pp. 1705-1748

76 Ectopic Gestation; Symptom-Complex of Its Early Stages. W. B. Moulton, Portland.
77 Cause and Cure of Eclampsia. A. P. Leighton, Portland.

Mississippi Medical Monthly, Vicksburg

February, XVIII, No. 10, pp. 187-206

78 Treatment of Lobar Pneumonia. E. W. Mackey, Purvis.
79 The Past and Present (Progress in Medicine). H. C. Buck, Friars Point.
80 Case of Hemoglobinuria of Unusual Type. T. G. Hughes, Clarksdale.
81 Medical Treatment of Exophthalmic Goiter. B. W. Fontaine, Memphis, Tenn.

New Jersey Medical Society Journal, Orange

February, XI, No. 2, pp 55-108

82 Obstructive Conditions of Gastro-Intestinal Tract. F. D. Gray, Jersey City.
83 Relation of Vaccines and Serums to General Public Health. H. D. Pease, New York.
84 Malingering. E. D. Newman, Newark.
85 Does State of New Jersey Maintain a Custodial Institution for Feeble-Minded? L. M. Halsey, Williamstown.

New York Medical Journal

February 14, XCIX, No. 7, pp. 305-356

86 The Positive and Negative Diagnosis of Gastric Cancer by Means of Serial Roentgenography. L. G. Cole, New York.
87 Aneurysms. R. A. Kellty, Philadelphia.
88 Intestinal Resection. Raymond C. Turck, Jacksonville, Fla.
89 Some Scientific Aspects of Inoculation Therapy. W. Walter, Chicago.
90 Besredka's Sensitized Vaccines. F. E. Stewart, Philadelphia.
91 Amebic Dysentery. F. C. Yeomans, New York.
92 Magnesium Sulphate and Glycerin in Treatment of Infections. E. M. Freese, Jamestown, N. Dak.
93 Two Remarkable Cases of Obesity. J. Weiss, New York.
94 Technic of Outlying Thyroid. M. S. Woodbury, Clifton Springs, N. Y.

Northwest Medicine, Seattle, Wash.

February, VI, No. 2, pp. 31-60

95 Success in Treatment of Congenital Club-Foot. C. R. McClure, Portland, Ore.
96 Cardinal Principles in Management of Bone Tuberculosis. F. J. Fassett, Seattle, Wash.
97 Scoliosis. S. C. Baldwin, Salt Lake City, Utah.
98 Kinking at First and Second Portions of Duodenum Considered as Clinical Study. N. W. Jones, Portland, Ore.
99 *Diagnosis of Chronic Stomach Troubles. K. Winslow, Seattle, Wash.
100 Plaut Vincent's Angina, with Report of Five Patients Treated with Salvarsan. R. A. Greene, Spokane, Wash.
101 Why the Cystoscope? J. Besson, Portland, Ore.

99. **Diagnosis of Chronic Stomach Troubles.**—All the entities or the diseases of the stomach to be found in text-books, Winslow claims, are in reality in most cases only symptoms, i. e., gastritis, atony, hyperacidity, hypersecretion, achylia, neuroses, with the exception of ulcer and cancer. Gastric analysis, he continues, gives many practitioners a false idea that they have achieved a diagnosis instead of a symptom and often merely a symptom of a symptom. The finding of food remnants in the fasting stomach is the most important result of the use of the stomach tube. The recent improvements in roentgenography have made this means of great value in the diagnosis of ulcer, cancer, ptosis, atony and pyloric insufficiency. The great frequency of associated abdominal lesions is not yet properly appreciated and makes diagnosis difficult and often impossible. The elimination of general diseases and enteroptosis, with its allied atony and neuroses, in the diagnosis of stomach troubles eliminates two-thirds of the cases of chronic stomach troubles. Of the remaining 30 per cent., 20 per cent. of the cases are secondary to abdominal lesions outside of the stomach and only 10 per cent. are true diseases of the stomach—ulcer and cancer.

Ophthalmic Record, Chicago

February, XXIII, No. 2, pp. 55-108

102 Prism-Dioptry Establishes Dimensional Unit at Optic Chiasm. C. F. Prentice, New York.
103 Theoretical Consideration of Some Phases of Sympathetic Ophthalmia. H. Gifford, Omaha, Neb.
104 Case of Glioma of Retina in Jamaican Two Years Old. D. F. Reeder and S. T. Darling, Ancon, C. Z.
105 Salvarsan and Neosalvarsan in Treatment of Syphilis with Special Reference to Diseases of Eye. A. A. Uhle and W. H. MacKinney, Philadelphia.
106 Hard Plug Method of Controlling Hemorrhage Deep in Orbit, as Illustrated in Case of Aneurysmal Varix. H. Gifford, Omaha, Neb.
107 Table Instead of Chart for Tonometer. E. C. Ellett, Memphis, Tenn.
108 Two Useful Remedies in Treatment of Diseases of Conjunctiva. R L. Thomson, Spokane, Wash.

Public Health Journal, Toronto, Ont.

February, V, No. 2, pp. 67-136

109 Medical Inspection of Schools in Toronto. W. E. Struthers, Toronto.
110 Status of School Dentistry.° A. Irwin, Newark, N. J.
111 School Nursing in Toronto. L. L. Rogers, Toronto.
112 School Nursing in Regina. J. Brown, Regina.
113 Japanese Gardens and Groves. F. Withrow.

Tennessee State Medical Association Journal, Nashville

February, VI, No. 10, pp. 373-412

114 Cholelithiasis. R. A. Barr, Nashville.
115 Treatment of Syphilis. P. Bromberg, Nashville.
116 Circumcision. C. F. Anderson, Nashville.
117 Means of Lessening Anesthetic Injuries and Fatalities. R. F. Patterson, Nashville.
118 Anesthetics. W. N. Lynn, Knoxville.
119 How to Care for New Baby's Eyes. R. Fagin, Memphis.
120 Treatment of Wounds. D. Eve, Nashville.
121 Triumph of Ages. M. G. Price, Mosheim.
122 Nasal Polypi. R. B. Nelson, Memphis.

Pyloric obstruction to a variable degree occurred in 198 or 34 per cent. of the 576 cases of duodenal ulcer. Gastric analyses showed food remnants in varying amounts after 12 hours in 100 cases or 50 per cent. Reports were received from 163 patients. Nine had died since the operation. Ninety-four per cent. of the remainder were cured or greatly improved.

In 197 of the cases of gastric ulcer, obstruction was present in 78, or 39 per cent. Food remnants were noted in 58, or 71 per cent. Thirteen patients had died since operation. Ninety-two per cent. of the remainder were cured or greatly improved.

In the series of duodenal ulcers, 106, or 19 per cent. of patients gave a history of hemorrhage preceding operation. Thirty-one patients had hemorrhage of variable degree following the operation, but only 18 of these had hemorrhage prior to operation. Therefore there was hemorrhage in 13 cases following operation in which there was no history of preoperative bleeding. In these the hemorrhage occurred some time after operation and was severe in only a small percentage. Out of a total of 108 patients, 94, or 88 per cent., had a gastrojejunostomy performed, only 4 per cent. had excision or infolding of the ulcer in addition to gastrojejunostomy. Excision or pyloroplasty was done in 8 cases, or 8 per cent. Three of the patients had postoperative hemorrhage in which excision or infolding had been done. Forty-eight, or 23 per cent. of patients with gastric ulcer had hemorrhage prior to operation. Eight patients, or 13 per cent., had postoperative hemorrhage and of this group only three gave a history of hemorrhage prior to operation. Thus in 5 instances there was bleeding in varying amounts following operation in which there was no pre-operative history of hemorrhage. Gastrojejunostomy was the operation of choice in 48 per cent. and excision or infolding of the ulcer in 80 per cent. Excision alone, pyloroplasty or resection with or without gastrojejunostomy, was the operation of choice in 48 per cent. Gastrojejunostomy alone was effective in preventing recurrence of all cases which gave a history of hemorrhage prior to operation. The coexistence of disease in the appendix (16 per cent.) or gall-bladder (7 per cent.) was noted and corrected in 11 per cent. of all cases of duodenal ulcer. In the group of gastric ulcers coincident disease of the appendix (14 per cent.) or gall-bladder (5 per cent.) was present in 9 per cent. In a considerable number of cases, operation was necessary on both organs in addition to the ulcer, with favorable end-results.

38. **Leprosy.**—In the morning the pulse-rate is higher than at evening; often markedly so. That this condition is not due to the greater morning activity of the patient or to atmospheric changes has already been determined by Honeij. Great care has been taken in the making of these records, and as far as possible, surrounding conditions were alike (morning and evening): An enforced rest of half an hour previous to taking the pulse and various precautions were observed and controls made to exclude errors. To exclude thermometer faults, all thermometers were compared and adjusted. The patients were at all times under the supervision of a nurse.

This clinical observation was carried out with sixteen patients, during the year 1913. This heretofore undescribed phenomenon occurs in the majority of cases, and especially in those patients who are in an advanced, active stage of the disease. The same condition is present during febrile disturbances. Honeij considers the change in morning pulse-rate as an index to the condition of the patient. In analyzing the result of this work and the frequency of the occurrence of this phenomenon for five months, the following facts have been obtained by Honeij: In the six patients who present this change in more than three-fourths of the time noted, one has died, four are in the most advanced stages, and one is an exception, being an anesthetic case. Three cases demonstrate the change noted in more than one-half of this period. In the second of these patients there is a marked increase agreeing with the general condition, during the last three months and in the third during the last two months. In the other case there is a marked decrease in the last two months agreeing most strikingly with the recovery of the patient from a prolonged and serious condition. Three cases show this change during more than one-fourth of the time, and in two of these cases there is still greater increase during October and November. Clinically these patients are in an advanced stage. Four cases, all in the early or less serious stage of the disease gave negative results during July, August, September, and with one exception during October and November.

California State Journal of Medicine, San Francisco

February, XII, No. 2, pp. 45-86

40 Plea for Immediate Operation of Fractures. C. G. Levison, San Francisco.
41 Bernard Treatment of Poliomyelitis. D. H. Moulton, Chico.
42 Surgical Complications, Treatment and Preventions. C. P. Thomas, Los Angeles.
43 Congenital Dislocation of Hip and Extensive Skeletal Tuberculosis. H. M. Sherman, San Francisco.
44 Epidemiology and Control of Hydrophobia. W. A. Sawyer, San Francisco.
45 Positive Reading Manometer for Therapeutic Pneumothorax. E. Von Adelung, Oakland.

Cleveland Medical Journal

February, XIII, No. 2, pp. 81-140

46 *Repeated Cesarean Section. A. B. Davis, New York.
47 Treatment of Carcinoma of Female Genitals with Mesothorium. J. J. Thomas, Cleveland.
48 *Pain Distribution in Diaphragmatic Pleurisy. R. Dexter, Cleveland.

46. **Repeated Cesarean Section.**—Davis has performed repeated cesarean operations in thirty-three cases. Twenty-two the second time, eight the third time and in one case each, the third, fourth, fifth and sixth time. Contracted pelvis in some form was the indication for the operation in each case. The uterine scar was strong and firm in twenty-three cases. In four cases it could not be found. In three cases it was thinned in places and of irregular thickness. There was partial rupture of the scar in two cases. In one of these two the rupture extended downward to the left, lacerating through the thinned out lower uterine segment. This patient was sterilized. Both mothers and their infants made good recovery. The third patient was brought to the hospital in a condition of severe shock, with child, placenta and much blood free in the abdominal cavity and the uterus ruptured throughout the entire length of the former cesarean wound. The child was dead and the mother died in twelve hours after a quick operation repairing the rupture. Attention is called to the fact that all three of these patients had been in active labor for many hours before coming to the hospital. Early cesarean section at or just before the onset of labor would have prevented these uterine ruptures.

48. **Pain Distribution in Diaphragmatic Pleurisy.**—While the majority of the cases of diaphragmatic pleurisy will, in all probability, be associated with involvement of the base of the lung, Dexter claims that there are a certain number in which no such involvement can be demonstrated. In these cases the distribution of the pain toward the abdomen may lead to a diagnosis of an acute condition in the upper abdomen. It is in this class of cases that the recognition of pain and tenderness in the neck region will materially help in the differential diagnosis. With inflammation of the central portion of the diaphragm, one may expect the pain to be referred to the region of the neck, while if the outer edge of the diaphragm be irritated the pain will be referred along the dorsal segments to the abdomen.

Iowa State Medical Society Journal, Clinton

February, III, No. 8, pp. 467-546

49 Brain Injury, Its Results. G. Kessel, Cresco.
50 Glaucoma. W. W. Pearson, Des Moines.
51 Care and Treatment of Tubercular Insane. R. L. Russell, Cherokee.
52 Transverse Abdominal Incision for Pelvic Surgery in Female. J. G. Davis, Des Moines.
53 Newer Treatment of Fractures. W. W. Bowen, Ft. Dodge.
54 Physical Defects of Mentally Deficient. F. P. Lierle, Marshalltown.
55 Electrical Treatment of Female Pelvic Diseases. G. H. Cutler, Cedar Falls.
56 Epilepsy. W. A. Bryan, Cherokee.
57 Treatment of Dacryocystitis. F. W. Dean, Council Bluffs.
58 Anesthetics, Anesthesia and the Anesthetist. G. T. McCauliff, Webster City.

Journal of Outdoor Life, New York

February, XI, No. 2, pp. 33-63

59 Food and Tuberculosis. F. H. Heise, Trudeau, N. Y.
60 Baths and Disease: Problem in Rural Districts. D. B. Armstrong, New York.
61 Hints and Helps for Tuberculosis Patients. C. L. Minor, Asheville, N. C.

The Lancet-Clinic, Cincinnati

February 14, CXI, No. 7, pp. 190-206

62 Clinical Examination of Feces. C. L. Overlander, Boston.
63 Endocarditis with Special Reference to Its Etiology as Shown by Specimens. R. H. Babcock, Chicago.
64 Functional Testing of Cardiac Powers. C. S. Williamson, Chicago.

Laryngoscope, St. Louis

January, XXIV, No. 1, pp. 1-80

65 **Case of Purpura Hemorrhagica.* M. A. Goldstein, St. Louis.*
66 Some Serious Eye Conditions the Result of Intranasal and Nasal Accessory Sinus Disease. J. A. Stucky, Lexington, Ky.
67 Brain Infection from Sinus Disease. W. Freudenthal, New York.
68 Hypertrophied Tonsils Interfering with Action of Palate and Causing Defective Speech. G. Hudson-Makuen, Philadelphia.
69 Acute Phlegmonous Epiglottiditis. M. D. Lederman, New York.
70 Use of Electro-Magnets in Extraction of Metallic Bodies from Trachea and Bronchi, with Report of Cases. S. Iglauer, Cincinnati.
71 *Violet Ray and Ozone of Use in Nose, Throat and Ear Conditions.* K. W. Baldwin, Philadelphia.
72 Skull of Aborigines: Specimen of Temporal Bone. T. J. Harris, New York.
73 *Brain Explorer and Two Modifications of Allport's Speculum.* H. Gifford, Omaha, Neb.
74 Instrument for Separating Vocal Cords and Opening Mouth of Esophagus. R. C. Lynch, New Orleans.
75 La Force Hemostat Tonsillectome. B. D. La Force, Ottumwa, Iowa.

65. **Case of Purpura Hemorrhagica.**—The factors of unusual interest in Goldstein's case from a laryngologic point of view were the localization of unusual and sharply marked purpuric blotches in the mouth and buccal cavity, spontaneous bleeding from the nose and gums as possible etiologic factors, the apparent ineffectiveness of internal therapy until the injection of diphtheritic serum had been made. All of the areas of pigmentation, whether in the mucosa or skin of body and extremities appeared on the left side. In the mouth and buccal cavity this intense pigmentation was outlined by a sharp straight line to the vertical edge of the median raphe in the hard and soft palate and the frenum in the gums of the lower jaw. The deepest coloration of bluish-red appeared over the hard palate corresponding to the area over the floor of the nose; Goldstein suggests that this might, perhaps, be associated with the original pathology in the alar wall of the nose and nasal wall and floor of antrum. Of all the therapeutic measures carried out in the conduct of this case Goldstein believes that the only effective agent utilized was the injection of two tubes (10 c.c. each) of anti-diphtheric serum. Thirty-six hours after injection of the serum all packings were removed from the nose and very little oozing followed.

Maine Medical Association Journal, Portland

February, IV, No. 7, pp. 1705-1748

76 Ectopic Gestation; Symptom-Complex of Its Early Stages. W. B. Moulton, Portland.
77 Cause and Cure of Eclampsia. A. P. Leighton, Portland.

Mississippi Medical Monthly, Vicksburg

February, XVIII, No. 10, pp. 187-206

78 Treatment of Lobar Pneumonia. E. W. Mackey, Purvis.
79 The Past and Present (Progress in Medicine). H. C. Buck, Friars Point.
80 Case of Hemoglobinuria of Unusual Type. T. G. Hughes, Clarksdale.
81 Medical Treatment of Exophthalmic Goiter. B. W. Fontaine, Memphis, Tenn.

New Jersey Medical Society Journal, Orange

February, XI, No. 2, pp 55-108

82 Obstructive Conditions of Gastro-Intestinal Tract. F. D. Gray, Jersey City.
83 Relation of Vaccines and Serums to General Public Health. H. D. Pease, New York.
84 Malingering. E. D. Newman, Newark.
85 Does State of New Jersey Maintain a Custodial Institution for Feeble-Minded? L. M. Halsey, Williamstown.

New York Medical Journal

February 14, XCIX, No. 7, pp. 305-356

86 The Positive and Négative Diagnosis of Gastric Cancer by Means of Serial [illegible] G. Cole, New York.
87 Aneurysms. R. A [illegible]
88 Intestinal Resectio[illegible] Jacksonville, Fla.
89 Some Scientific Aspects of Inoculation Therapy. W. Walter, Chicago.
90 Besredka's Sensitized Vaccines. F. E. Stewart, Philadelphia.
91 Amebic Dysentery. F. C. Yeomans, New York.
92 Magnesium Sulphate and Glycerin in Treatment of Infections. E. M. Freese, Jamestown, N. Dak.
93 Two Remarkable Cases of Obesity. J. Weiss, New York.
94 Technic of Outlying Thyroid. M. S. Woodbury, Clifton Springs, N. Y.

Northwest Medicine, Seattle, Wash.

February, VI, No. 2, pp. 31-60

95 Success in Treatment of Congenital Club-Foot. C. R. McClure, Portland, Ore.
96 Cardinal Principles in Management of Bone Tuberculosis. F. J. Fassett, Seattle, Wash.
97 Scoliosis. S. C. Baldwin, Salt Lake City, Utah.
98 Kinking at First and Second Portions of Duodenum Considered as Clinical Study. N. W. Jones, Portland, Ore.
99 *Diagnosis of Chronic Stomach Troubles. K. Winslow, Seattle, Wash.
100 Plaut Vincent's Angina, with Report of Five Patients Treated with Salvarsan. R. A. Greene, Spokane, Wash.
101 Why the Cystoscope? J. Besson, Portland, Ore.

99. **Diagnosis of Chronic Stomach Troubles.**—All the entities or the diseases of the stomach to be found in text-books, Winslow claims, are in reality in most cases only symptoms, i. e., gastritis, atony, hyperacidity, hypersecretion, achylia, neuroses, with the exception of ulcer and cancer. Gastric analysis, he continues, gives many practitioners a false idea that they have achieved a diagnosis instead of a symptom and often merely a symptom of a symptom. The finding of food remnants in the fasting stomach is the most important result of the use of the stomach tube. The recent improvements in roentgenography have made this means of great value in the diagnosis of ulcer, cancer, ptosis, atony and pyloric insufficiency. The great frequency of associated abdominal lesions is not yet properly appreciated and makes diagnosis difficult and often impossible. The elimination of general diseases and enteroptosis, with its allied atony and neuroses, in the diagnosis of stomach troubles eliminates two-thirds of the cases of chronic stomach troubles. Of the remaining 30 per cent., 20 per cent. of the cases are secondary to abdominal lesions outside of the stomach and only 10 per cent. are true diseases of the stomach—ulcer and cancer.

Ophthalmic Record, Chicago

February, XXIII, No. 2, pp. 55-108

102 Prism-Dioptry Establishes Dimensional Unit at Optic Chiasm. C. F. Prentice, New York.
103 Theoretical Consideration of Some Phases of Sympathetic Ophthalmia. H. Gifford, Omaha, Neb.
104 Case of Glioma of Retina in Jamaican Two Years Old. D. F. Reeder and S. T. Darling, Ancon, C. Z.
105 Salvarsan and Neosalvarsan in Treatment of Syphilis with Special Reference to Diseases of Eye. A. A. Uhle and W. H. MacKinney, Philadelphia.
106 *Hard Plug Method of Controlling Hemorrhage Deep in Orbit,* as Illustrated in Case of Aneurysmal Varix. H. Gifford, Omaha, Neb.
107 Table Instead of Chart for Tonometer. E. C. Ellett, Memphis, Tenn.
108 Two Useful Remedies in Treatment of Diseases of Conjunctiva. R L. Thomson, Spokane, Wash.

Public Health Journal, Toronto, Ont.

February, V, No. 2, pp. 67-136

109 Medical Inspection of Schools in Toronto. W. E. Struthers, Toronto.
110 Status of School Dentistry. A. Irwin, Newark, N. J.
111 School Nursing in Toronto. L. L. Rogers, Toronto.
112 School Nursing in Regina. J. Brown, Regina.
113 Japanese Gardens and Groves. F. Withrow.

Tennessee State Medical Association Journal, Nashville

February, VI, No. 10, pp. 373-412

114 *Cholelithiasis. R. A. Barr, Nashville.*
115 Treatment of Syphilis. P. Bromberg, Nashville.
116 Circumcision. C. F. Anderson, Nashville.
117 Means of Lessening Anesthetic Injuries and Fatalities. R. F. Patterson, Nashville.
118 Anesthetics. W. N. Lynn, Knoxville.
119 How to Care for New Baby's Eyes. R. Fagin, Memphis.
120 Treatment of Wounds. D. Eve, Nashville.
121 Triumph of Ages. M. G. Price, Mosheim.
122 Nasal Polypi. R. B. Nelson, Memphis.

Texas State Journal of Medicine, Fort Worth

February, IX, No. 10, pp. 301-332

123 Infections of Renal Pelvis and Ureter. W. F. Braasch, Rochester, Minn.
124 *Renal Tuberculosis. F. C. Walsh, San Antonio.
125 Non-Tuberculous Infection of Kidney. A. I. Folsom, Dallas.
126 *Treatment of General Peritonitis. C. Johnson, Fort Worth.
127 Physician's Duty to Health Officials. A. W. Nash, Dallas.
128 Should State Increase Its Domain in Preventive Medicine. A. C. DeLong, San Angelo.
129 Preservation of Health. L. H. Reeves, Decatur.
130 Extra-Genital Chancroid: Report of Case. J. B. Shelmire, Dallas.
131 Glaucoma: Recent Observations with Reference to Pathology and Treatment. J. J. Crume, Amarillo.
132 Case of Melanotic Sarcoma of Chorioid. J. Mullen, Houston.
133 Preliminary Report of New Method for Therapeutic Use of Typhoid Vaccine. I. S. Kahn, San Antonio.

124. **Renal Tuberculosis.**—Two points are emphasized by Walsh, first, that all cases of so-called causeless cystitis are suspicious indications of renal tuberculosis and should be carefully examined therefor, using the cystoscope in all instances; second, a prompt nephrectomy, whenever possible, is undoubtedly the safest method of treatment.

126. **Treatment of General Peritonitis.**—Johnson is emphatic in stating that every patient with peritonitis should be operated on within the first forty or fifty hours, when possible to do so. After this period of time has elapsed, a more serious condition is present. There is a certain class of cases in which operation is as clearly indicated after as before the first fifty hours—in which the patient is strong and has resisted the spread of the infection, has a pulse volume, a heart that beats, and is not pushed; a dry skin and a general encouraging appearance. The other class of cases, past the fifty-hour mark, are those that are very bad from the beginning, susceptible to infection, rapid absorption, pinched features, a thin, rapid, pushing pulse with no volume, cyanosed and with a wet, leaky skin. These cases are clearly in no condition to withstand any kind of operation. They should be treated according to the Fowler-Murphy method—sitting posture and saline by the bowel. These cases will either terminate fatally very soon or the inflammation will localize and the operation can be done at a later period. The method of operative procedure Johnson prefers is to make a liberal incision through the semilunar line, in case of appendicitis-peritonitis; search for and remove the appendix; ascertain if any pockets of pus exist and open them; place free drainage of rubber or glass tubes, directly down, possibly another rubber or glass in the pelvis and in case of a woman drain through the vagina. When taken to his room the patient is placed upright on a Mather's bed and the saline begun by rectum. Where the small gut is loaded with fluid and distended with gas, Johnson opens the gut and drains its contents, closing the opening in the gut with a fine linen thread. In a few cases he has punctured and drained the intestine in three places. These cases have been the most satisfactory of any he has operated on.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

February, XI, No. 122, pp. 49-96

1 *Food Requirements of Infants. E. Pritchard.
2 Hemorrhagic and Gangrenous Varicella, with Report of Two Cases. H. C. Storrie.
3 Case of Purpura of Unknown Origin with Rapidly Fatal Termination. G. Pernet.

1. **Food Requirements of Infants.**—An abnormal increase in weight, say of 10 to 14 oz. per week, in a baby under a year old, if maintained for any prolonged period of time, Pritchard says, should at once suggest that the storage resources of the body are being over-strained, and such an event should lead us to expect that when the critical limit is reached, resort will be made to inner lines of defense, with possibly more serious consequences to the individual as a whole. Again, if the capillaries of the cheeks are dilated, if there is sweating about the head, and if the respiration-rate is unduly raised, we are entitled to suspect, in the absence of a better explanation, that reserve methods of heat-dissipation are being called into requisition. Then, if we are wise, we shall take steps to insure that worse things do not befall the child. We should, in fact, curtail the supply, or increase the demand for food. It is clearly the duty of the physician to exercise the greatest vigilance in the detection of these early symptoms, but it is very difficult to convince the lay mind that rosy cheeks and a fine weight record can be of unfavorable augury.

It is a matter of almost daily experience for Pritchard to find that attacks of bronchitis, diarrhea or intestinal toxemia have been preceded by prolonged periods of apparently exuberant health. He states that no infant, breast-fed or artificially fed, can be considered to be in a satisfactory condition unless its physiologic demand for food is of the following approximate standard: *An infant three months old and weighing 5 kg.* (11 pounds) *should not require less than* 690 c.c. (23 ounces) of breast-milk, or its equivalent, in the twenty-four hours; an infant 6 months old and weighing 7.5 kg. (16½ pounds) should not require less than 900 c.c. (30 ounces); *and an infant 9 months of age should require not* less than 1,080 c.c. (36 ounces). If, when taking food in these quantities, there is evidence, by reason of the development of any of the symptoms already mentioned, that there is an excessive intake, Pritchard would advise that steps be taken to increase the demand for food by a revision of the hygienic management of the child.

British Medical Journal, London

February 7, I, No. 2771, pp. 285-348

4 Uniform Success of Segregation Measures in Eradicating Kala-Azar from Assam Tea Gardens: Its Bearing on Probable Mode of Infection. J. D. Price and L. Rogers.
5 Wild Game as Reservoir for Human Trypanosomes. H. L. Duke.
6 Trypanosomiasis, Tsetse and Big Game. G. Prentice.
7 Epidemic Dysentery in Fiji Islands. P. H. Bahr.
8 Intestinal Schistosomiasis in Sudan. R. G. Archibald.
9 Etiology of Beriberi. W. J. J. Arnold.
10 Zeism or Pellagra? P. A. Nightingale.
11 *Anastomosis of Vas Deferens. W. I. de C. Wheeler.
12 Spread of Cancer in Lower Part of Large Intestine. G. L. Cheatle.

11. **Anastomosis of Vas Deferens.**—The divided ends of the vas are passed by Wheeler over the eye and point of a fine straight needle until they meet. A few points of suture are then inserted, and the needle is pushed out through the wall of the vas at a distance from the anastomotic junction. The line of sutures is wrapped round with neighboring fascia to give additional strength. Wheeler suggests that after salpingectomy the anastomosis of the fallopian tubes could readily be accomplished by the same device.

Edinburgh Medical Journal

February, XII, No. 2, pp. 97-192

13 *Tuberculin: Rationale of Its Use: Its Possibilities and Limitations. E. Beraneck.
14 Neurasthenia. J. Ritchie.
15 *Treatment of Intestinal Toxemia. D. C. Watson.
16 Neosalvarsan Treatment of Syphilis. D. J. Guthrie.
17 Royal College of Surgeons of Edinburgh: Anatomy in Early Days. C. H. Creswell.
18 Prevalence of Living Tubercle Bacilli in Edinburgh Milk. J. Miller.

13. **Tuberculin.**—The less effectively an organism defends itself against bacillary infection, Beraneck says, the less also will be the success with which the use of tuberculin is followed. This is why treatment with tuberculin is not justifiable in those acute forms of tuberculosis which at the onset cause a profound lowering of the general condition and a rapid invasion of the organs. Nor should it be used for those tuberculous patients who after a more or less prolonged resistance have exhausted their defensive resources and are almost at the point of death. The chances of success in tuberculin-therapy are increased by intervening as soon as tuberculosis is diagnosed or even suspected. It is in these circumstances that the specific curative action of tuberculin finds its place, and the best and most lasting results are achieved. Beraneck emphasizes that tuberculin-therapy must not be regarded as a "reserve" procedure, only to be resorted to when other methods have failed.

15. **Treatment of Intestinal Toxemia.**—Watson recognizes three distinct groups of conditions that arise mainly or entirely from intestinal toxemia. 1. A Neurasthenic Group.

2. Rheumatoid Arthritis. 3. A "Dyspeptic" Group. Referring to the second group, he says that as a result of a close study of the disease for many years he has been led to share the view as to its infective origin, the source of the infection being invariably one of the three mucous surfaces of the body. In the great majority of cases the infection comes from the gastro-intestinal tract, oral sepsis and pyorrhea alveolaris being not infrequently primary factors in this intestinal infection. In the remaining cases the infection comes from the genito-urinary tract or the respiratory mucous membrane. Watson is doubtful, however, whether the clinical pictures of rheumatoid arthritis are due to a single infecting agent. He regards it as probable that a slow infection by different organisms brings out the pathologic conditions that are at present included in the term rheumatoid arthritis. He is satisfied that the disease is essentially curable in its early stages. In the later stages of the disease the intestinal mucous membrane and especially the large bowel, has become seriously involved, and in some cases it is not possible to correct this by medical means.

Glasgow Medical Journal

February, LXXXI, No. 2, pp. 81-159

19 Prevention of Malaria. M. Watson.
20 History and Prevention of Venereal Disease. D. Newman.
21 *Case of Patent Ductus Arteriosus. A. W. Harrington.
22 Recent Work on Etiology of Gall-Stones. J. W. M'Nee.

21. **Patent Ductus Arteriosus.**—The one symptom on which the diagnosis was based in Harrington's case was a loud, rough, somewhat musical murmur, diminuendo in character, audible all over the cardiac area. It was well heard at the apex and the pulmonic area. It was better heard at the outer end of the left clavicle, 1½ inch from mid-sternum. It was well heard over the left back, and its site of maximum intensity is about the middle of the left scapula. It was also audible over the right back. The murmur was very long, attaining its maximum intensity after the commencement of the first sound, and lasting almost to the next first sound. The second sound was faintly audible in the middle of the murmur, but was only heard distinctly toward the sternum. Polygraph tracings showed that the cardiac rhythm was normal, and that the apex-beat, the pulsation on the right side, and that in the epigastrium were synchronous. Roentgenograms showed remarkable alterations in the contour of the heart. Instead of the normal conical shadow, the heart is more or less elongated transversely, and of the "recumbent egg" form. The right side was large and prominent, and the basal vessels swept almost straight upward to the clavicle. The photograph from behind showed the right border of the descending aorta to be prominent and distinct.

Lancet, London

February 7, I, No. 4719, pp. 367-434

23 Glycosuria. W. H. White.
24 *Treatment of Fractures of External Malleolus. J. Bland-Sutton.
25 Diathermy, or Electric Warming of Tissues of Body. H. L. Jones.
26 *Vaccines from Standpoint of Physician. H. D. Rolleston.
27 Fresh Alarms on Increase of Cancer. E. F. Bashford.
28 Operation to Improve Effect of Artificial Eye. N. B. Harman.
29 Fragility of Red Cells in Conditions Associated with Jaundice. G. D. Whyte.

24. **Fractures of External Malleolus.**—In dealing with fractures involving joints, especially when a small piece is detached, Bland-Sutton says he occasionally removes the broken fragment. He has on several occasions dissected out a broken styloid process of the radius without impairing the utility of the wrist-joint. On three occasions he has excised the hemispherical portion of the head of the humerus when it has been broken off by direct injury and displaced. In one case in which the cartilage-clad portion of the head of the humerus was broken off, in an elderly lady who was run over by a cab, the disc-shaped fragment was forced through the great scapular notch into the infrascapular fossa, lying therefore on the dorsal aspect of the scapula. These operations were followed by quick recovery and a useful limb. Small detached portions of the articular end of the humerus are not only extremely awkward to fix with wire, but difficult to keep in position by any method of splinting. Excision of such small detached fragments of the humerus is safe, simple and leaves a very satisfactory joint. The excision of small fragments of bone involving articular surfaces gives such good results in the shoulder, elbow and wrist-joints that Bland-Sutton tried it in three cases of fracture of the external malleolus.

26. **Vaccines from Standpoint of Physician.**—Opinion on vaccine therapy is divided by Rolleston into the following classes: 1. The optimistic, held by those who, while under the fascination of a new conception of a really rational treatment, have seen several cures in succession. This attitude is usually somewhat modified by time. 2. The pessimistic, more often expressed in private than in print, to the effect that vaccines never do any good and that benefit apparently due to their use is either a coincidence or is perhaps due to suggestion. 3. The doubtful or openminded. This, Rolleston says, is his position. At the present time, he continues, the results of vaccines are so uncertain that their use appears to be justified only when trustworthy therapeutic methods have failed or do not exist. That good effects, sometimes dramatic in their intensity, may follow the use of vaccines, is also undoubted. But the old question, *post hoc propter hoc*, arises. Difficult as it is to decide this problem in the absence of exact controls, it seems wiser to act as if the sequence of events was not a coincidence only, and in cases in which nothing better is available to give patients the chance of benefit from vaccine treatment.

Bulletin de l'Académie de Médecine, Paris

January 20, LXXVIII, No. 3, pp. 57-90

30 *Emetin and Hemoptysis. Aubert, Bouyer and Chauffard.
31 Fluorin in Animal Tissues. A. Gautier.
32 Cholera in the Balkan Wars. V. Babes.
33 Re-Educating the Ear by Exercising the Hearing with Small Siren. (Règles acoustiques et cliniques de la rééducation auditive.) Marage.

30. **Emetin Arrests Hemoptysis.**—Chauffard states that nothing he knows of has such a rapid and effective action in arresting hemoptysis as emetin. Without nauseating or reducing the blood-pressure appreciably, the tendency to hemorrhage is arrested almost at once by injection of 0.04 or 0.06 c.c. of emetin hydrochlorid. This occurred apparently irrespective of the cause of the hemoptysis, whether it was the result of a tuberculous or pneumonic process or of perforation into a bronchus of an amebic abscess in the liver.

Journal d'Urologie, Paris

January, V, No. 1, pp. 1-120

34 *Ambard's "Uremic Constant" with Tuberculosis of the Kidney. (Des applications de la constante à la néphrectomie pour tuberculose.) F. Legueu.
35 *Syndrome of the Movable Kidney. (Rein mobile.) G. Bolognesi.
36 Bladder Disease with Deposits of Calcium Phosphate. (La cystite incrustée.) J. François.
37 Lesions in the Bladder Mucosa in Hemorrhagic Purpura. C. Bruni.
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39 Minor Technical Point in Catheterization of the Ureter A. Brandao, Jr.

34. **Ambard's "Uremic Constant" in Estimation of Functional Value of Kidneys.**—Legueu has applied this test in 1,200 cases and states that further experience has only confirmed his previous statements in regard to its precision and reliability. (His preceding communication on the subject was reproduced nearly in full in these columns May 3, 1913, p. 1400.) The uremic constant is the constant ratio between the urea in the blood and the square root of the urea excreted in the urine, with due regard to the weight of the individual and the concentration of the urine. The uremic constant in case of a tuberculous process in the kidney is modified by the extent of the functional disturbance entailed by the morbid process, also by the concomitant or consecutive inflammation in the kidney, and by the extent of the compensating hypertrophy of the sound mate or of parts of the diseased kidney. The sound mate in time may become so functionally capable that it may compensate entirely the diseased kidney; in this case the uremic constant would indicate normal con-

Texas State Journal of Medicine, Fort Worth

February, IX, No. 10, pp. 301-332

123 Infections of Renal Pelvis and Ureter. W. F. Braasch, Rochester, Minn.
124 *Renal Tuberculosis. F. C. Walsh, San Antonio.
125 Non-Tuberculous Infection of Kidney. A. I. Folsom, Dallas.
126 *Treatment of General Peritonitis. C. Johnson, Fort Worth.
127 Physician's Duty to Health Officials. A. W. Nash, Dallas.
128 Should State Increase Its Domain in Preventive Medicine. A. C. DeLong, San Angelo.
129 Preservation of Health. L. H. Reeves, Decatur.
130 Extra-Genital Chancroid: Report of Case. J. B. Shelmire, Dallas.
131 Glaucoma: *Recent Observations with Reference to Pathology* and Treatment. J. J. Crume, Amarillo.
132 Case of Melanotic Sarcoma of Chorioid. J. Mullen, Houston.
133 Preliminary Report of New Method for Therapeutic Use of Typhoid Vaccine. I. S. Kahn, San Antonio.

124. **Renal Tuberculosis.**—Two points are emphasized by Walsh, first, that all cases of so-called causeless cystitis are suspicious indications of renal tuberculosis and should be carefully examined therefor, using the cystoscope in all instances; second, a prompt nephrectomy, whenever possible, is undoubtedly the safest method of treatment.

126. **Treatment of General Peritonitis.**—Johnson is emphatic in stating that every patient with peritonitis should be operated on within the first forty or fifty hours, when possible to do so. After this period of time has elapsed, a more serious condition is present. There is a certain class of cases in which operation is as clearly indicated after as before the first fifty hours—in which the patient is strong and has resisted the spread of the infection, has a pulse volume, a heart that beats, and is not pushed; a dry skin and a general encouraging appearance. The other class of cases, past the fifty-hour mark, are those that are very bad from the beginning, susceptible to infection, rapid absorption, pinched features, a thin, rapid, pushing pulse with no volume, cyanosed and with a wet, leaky skin. These cases are clearly in no condition to withstand any kind of operation. They should be treated according to the Fowler-Murphy method—sitting posture and saline by the bowel. These cases will either terminate fatally very soon or the inflammation will localize and the operation can be done at a later period. The method of operative procedure Johnson prefers is to make a liberal incision through the semilunar line, in case of appendicitis-peritonitis; search for and remove the appendix; ascertain if any pockets of pus exist and open them; place free drainage of rubber or glass tubes, directly down, possibly another rubber or glass in the pelvis and in case of a woman drain through the vagina. When taken to his room the patient is placed upright on a Mather's bed and the saline begun by rectum. Where the small gut is loaded with fluid and distended with gas, Johnson opens the gut and drains its contents, closing the opening in the gut with a fine linen thread. In a few cases he has punctured and drained the intestine in three places. These cases have been the most satisfactory of any he has operated on.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

February, XI, No. 122, pp. 49-96

1 *[illegible]. E. Pritchard.
2 [illegible] Varicella, with Report of Two
3 Case of Purpura of Unknown Origin with Rapidly Fatal Termination. G. Pernet.

1. **Food Requirements of Infants.**—An abnormal increase in weight, say of 10 to 14 oz. per week, in a baby under a year old, if maintained for any prolonged period of time, Pritchard says, should at once suggest that the storage resources of the body are being over-strained, and such an event should lead us to expect that when the critical limit is reached, resort will be made to inner lines of defense, with possibly more serious consequences to the individual as a whole. Again, if the capillaries of the cheeks are dilated, if there is sweating about the head, and if the respiration-rate is unduly raised, we are entitled to suspect, in the absence of a better explanation, that reserve methods of heat-dissipation are being called into requisition. Then, if we are wise, we shall take steps to insure that worse things do not befall the child. We should, in fact, curtail the supply, or increase the demand for food. It is clearly the duty of the physician to exercise the greatest vigilance in the detection of these early symptoms, but it is very difficult to convince the lay mind that rosy cheeks and a fine weight record can be of unfavorable augury.

It is a matter of almost daily experience for Pritchard to find that attacks of bronchitis, diarrhea or intestinal toxemia have been preceded by prolonged periods of apparently exuberant health. He states that no infant, breast-fed or artificially fed, can be considered to be in a satisfactory condition unless its physiologic demand for food is of the following approximate standard: An infant three months old and weighing 5 kg. (11 pounds) should not require less than 690 c.c. (23 ounces) of breast-milk, or its equivalent, in the twenty-four hours; an infant 6 months old and weighing 7.5 kg. (16½ pounds) should not require less than 900 c.c. (30 ounces); and an infant 9 months of age should require not less than 1,080 c.c. (36 ounces). If, when taking food in these quantities, there is evidence, by reason of the development of any of the symptoms already mentioned, that there is an excessive intake, Pritchard would advise that steps be taken to increase the demand for food by a revision of the hygienic management of the child.

British Medical Journal, London

February 7, I, No. 2771, pp. 285-348

4 Uniform Success of Segregation Measures in Eradicating Kala-Azar from Assam Tea Gardens: Its Bearing on Probable Mode of Infection. J. D. Price and L. Rogers.
5 Wild Game as Reservoir for Human Trypanosomes. H. L. Duke.
6 Trypanosomiasis, Tsetse and Big Game. G. Prentice.
7 Epidemic Dysentery in Fiji Islands. P. H. Bahr.
8 Intestinal Schistosomiasis in Sudan. R. G. Archibald.
9 Etiology of Beriberi. W. J. J. Arnold.
10 Zeism or Pellagra? P. A. Nightingale.
11 *Anastomosis of Vas Deferens. W. I. de C. Wheeler.
12 Spread of Cancer in Lower Part of Large Intestine. G. L. Cheatle.

11. **Anastomosis of Vas Deferens.**—The divided ends of the vas are passed by Wheeler over the eye and point of a fine straight needle until they meet. A few points of suture are then inserted, and the needle is pushed out through the wall of the vas at a distance from the anastomotic junction. The line of sutures is wrapped round with neighboring fascia to give additional strength. Wheeler suggests that after salpingectomy the anastomosis of the fallopian tubes could readily be accomplished by the same device.

Edinburgh Medical Journal

February, XII, No. 2, pp. 97-192

13 *Tuberculin: Rationale of Its Use: Its Possibilities and Limitations. E. Beraneck.
14 Neurasthenia. J. Ritchie.
15 *Treatment of Intestinal Toxemia. D. C. Watson.
16 Neosalvarsan Treatment of Syphilis. D. J. Guthrie.
17 Royal College of Surgeons of Edinburgh: Anatomy in Early Days. C. H. Creswell.
18 Prevalence of Living Tubercle Bacilli in Edinburgh Milk. J. Miller.

13. **Tuberculin.**—The less effectively an organism defends itself against bacillary infection, Beraneck says, the less also will be the success with which the use of tuberculin is followed. This is why treatment with tuberculin is not justifiable in those acute forms of tuberculosis which at the onset cause a profound lowering of the general condition and a rapid invasion of the organs. Nor should it be used for those tuberculous patients who after a more or less prolonged resistance have exhausted their defensive resources and are almost at the point of death. The chances of success in tuberculin-therapy are increased by intervening as soon as tuberculosis is diagnosed or even suspected. It is in these circumstances that the specific curative action of tuberculin finds its place, and the best and most lasting results are achieved. Beraneck emphasizes that tuberculin-therapy must not be regarded as a "reserve" procedure, only to be resorted to when other methods have failed.

15. **Treatment of Intestinal Toxemia.**—Watson recognizes three distinct groups of conditions that arise mainly or entirely from intestinal toxemia. 1. A Neurasthenic Group.

2. Rheumatoid Arthritis. 3. A "Dyspeptic" Group. Referring to the second group, he says that as a result of a close study of the disease for many years he has been led to share the view as to its infective origin, the source of the infection being invariably one of the three mucous surfaces of the body. In the great majority of cases the infection comes from the gastro-intestinal tract, oral sepsis and pyorrhea alveolaris being not infrequently primary factors in this intestinal infection. In the remaining cases the infection comes from the genito-urinary tract or the respiratory mucous membrane. Watson is doubtful, however, whether the clinical pictures of rheumatoid arthritis are due to a single infecting agent. He regards it as probable that a slow infection by different organisms brings out the pathologic conditions that are at present included in the term rheumatoid arthritis. He is satisfied that the disease is essentially curable in its early stages. In the later stages of the disease the intestinal mucous membrane and especially the large bowel, has become seriously involved, and in some cases it is not possible to correct this by medical means.

Glasgow Medical Journal

February, LXXXI, No. 2, pp. 81-159

19 Prevention of Malaria. M. Watson.
20 History and Prevention of Venereal Disease. D. Newman.
21 *Case of Patent Ductus Arteriosus. A. W. Harrington.
22 Recent Work on Etiology of Gall-Stones. J. W. M'Nee.

21. Patent Ductus Arteriosus.—The one symptom on which the diagnosis was based in Harrington's case was a loud, rough, somewhat musical murmur, diminuendo in character, audible all over the cardiac area. It was well heard at the apex and the pulmonic area. It was better heard at the outer end of the left clavicle, 1½ inch from mid-sternum. It was well heard over the left back, and its site of maximum intensity is about the middle of the left scapula. It was also audible over the right back. The murmur was very long, attaining its maximum intensity after the commencement of the first sound, and lasting almost to the next first sound. The second sound was faintly audible in the middle of the murmur, but was only heard distinctly toward the sternum. Polygraph tracings showed that the cardiac rhythm was normal, and that the apex-beat, the pulsation on the right side, and that in the epigastrium were synchronous. Roentgenograms showed remarkable alterations in the contour of the heart. Instead of the normal conical shadow, the heart is more or less elongated transversely, and of the "recumbent egg" form. The right side was large and prominent, and the basal vessels swept almost straight upward to the clavicle. The photograph from behind showed the right border of the descending aorta to be prominent and distinct.

Lancet, London

February 7, I, No. 4719, pp. 367-434

23 Glycosuria. W. H. White.
24 *Treatment of Fractures of External Malleolus. J. Bland-Sutton.
25 Diathermy, or Electric Warming of Tissues of Body. H. L. Jones.
26 *Vaccines from Standpoint of Physician. H. D. Rolleston.
27 Fresh Alarms on Increase of Cancer. E. F. Bashford.
28 Operation to Improve Effect of Artificial Eye. N. B. Harman.
29 Fragility of Red Cells in Conditions Associated with Jaundice. G. D. Whyte.

24. Fractures of External Malleolus.—In dealing with fractures involving joints, especially when a small piece is detached, Bland-Sutton says he occasionally removes the broken fragment. He has on several occasions dissected out a broken styloid process of the radius without impairing the utility of the wrist-joint. On three occasions he has excised the hemispherical portion of the head of the humerus when it has been broken off by direct injury and displaced. In one case in which the cartilage-clad portion of the head of the humerus was broken off, in an elderly lady who was run over by a cab, the disc-shaped fragment was forced through the great scapular notch into the infrascapular fossa, lying therefore on the dorsal aspect of the scapula. These operations were followed by quick recovery and a useful limb. Small detached portions of the articular end of the humerus are not only extremely awkward to fix with wire, but difficult to keep in position by any method of splinting. Excision of such small detached fragments of the humerus is safe, simple and leaves a very satisfactory joint. The excision of small fragments of bone involving articular surfaces gives such good results in the shoulder, elbow and wrist-joints that Bland-Sutton tried it in three cases of fracture of the external malleolus.

26. Vaccines from Standpoint of Physician.—Opinion on vaccine therapy is divided by Rolleston into the following classes: 1. The *optimistic*, held by those who, while under the fascination of a new conception of a really rational treatment, have seen several cures in succession. This attitude is usually somewhat modified by time. 2. The pessimistic, more often expressed in private than in print, to the effect that vaccines never do any good and that benefit apparently due to their use is either a coincidence or is perhaps due to suggestion. 3. The doubtful or openminded. This, Rolleston says, is his position. At the present time, he continues, the results of vaccines are so uncertain that their use appears to be justified only when trustworthy therapeutic methods have failed or do not exist. That good effects, sometimes dramatic in their intensity, may follow the use of vaccines, is also undoubted. But the old question, *post hoc propter hoc*, arises. Difficult as it is to decide this problem in the absence of exact controls, it seems wiser to act as if the sequence of events was not a coincidence only, and in cases in which nothing better is available to give patients the chance of benefit from vaccine treatment.

Bulletin de l'Académie de Médecine, Paris

January 20, LXXVIII, No. 3, pp. 57-90

30 *Emetin and Hemoptysis. Aubert, Bouyer and Chauffard.
31 Fluorin in Animal Tissues. A. Gautier.
32 Cholera in the Balkan Wars. V. Babes.
33 [illegible] by Exercising the Hearing with Small [illegible] oustiques et cliniques de la rééducation [illegible]

30. Emetin Arrests Hemoptysis.—Chauffard states that nothing he knows of has such a rapid and effective action in arresting hemoptysis as emetin. Without nauseating or reducing the blood-pressure appreciably, the tendency to hemorrhage is arrested almost at once by injection of 0.04 or 0.06 c.c. of emetin hydrochlorid. This occurred apparently irrespective of the cause of the hemoptysis, whether it was the result of a tuberculous or pneumonic process or of perforation into a bronchus of an amebic abscess in the liver.

Journal d'Urologie, Paris

January, V, No. 1, pp. 1-120

34 *Ambard's "Uremic Constant" with Tuberculosis of the Kidney. (Des applications de la constante à la néphrectomie pour tuberculose.) F. Legueu.
35 *Syndrome of the Movable Kidney. (Rein mobile.) G. Bolognesi.
36 Bladder Disease with Deposits of Calcium Phosphate. (La cystite incrustée.) J. François.
37 Lesions in the Bladder Mucosa in Hemorrhagic Purpura. C. Bruni.
38 Aspiration in Treatment of Chronic Urethritis. A. Cariani.
39 Minor Technical Point in Catheterization of the Ureter A. Brandao, Jr.

34. Ambard's "Uremic Constant" in Estimation of Functional Value of Kidneys.—Legueu has applied this test in 1.200 cases and states that further experience has only confirmed his previous statements in regard to its precision and reliability. (His preceding communication on the subject was reproduced nearly in full in these columns May 3, 1913, p. 1400.) The uremic constant is the constant ratio between the urea in the blood and the square root of the urea excreted in the urine, with due regard to the weight of the individual and the concentration of the urine. The uremic constant in case of a tuberculous process in the kidney is modified by the extent of the functional disturbance entailed by the morbid process, also by the concomitant or consecutive inflammation in the kidney, and by the extent of the compensating hypertrophy of the sound mate or of parts of the diseased kidney. The sound mate in time may become so functionally capable that it may compensate entirely the diseased kidney; in this case the uremic constant would indicate normal conditions in regard to the secretion of urine, and the diseased kidney could be removed without the slightest hesitation.

In every case in which nephrectomy was done on the basis of a normal uremic constant—about 0.07—the ultimate course confirmed the correctness of the premises. A number of typical cases are described in detail out of the seventy in which the formula was calculated in advance of the nephrectomy. In twenty-two cases it proved impossible to introduce the ureter catheter and here the uremic constant was almost the sole reliance. None of the seventy patients died from renal insufficiency except one, and this was the only case in which the findings of the uremic constant had been disregarded, and, for certain special reasons, the operation was attempted contrary to its teachings. The fatal outcome of the nephrectomy in this case sustains anew the diagnostic importance of this method of estimating by a mathematical formula the work the kidneys are capable of doing in each individual.

35. **The Syndrome of the Movable Kidney.**—Bolognesi analyzes 28 cases of movable kidney in his practice to illustrate the multiplicity of symptoms which it may induce and thus mislead to the assumption of various abdominal affections. In only 11 cases were there pains, paroxysmal or otherwise; in 2 there were nervous phenomena; in 2, symptoms of gastro-intestinal atony; in 1, a combination of gastrointestinal disturbances and nervous phenomena; in 3, atony of the digestive tract with pain in the appendix; in 2 cases the movable kidney compressed the common bile duct with consequent retention of bile and formation of concrements; in 1 case the stomach had suffered most, the result being complete and persisting lack of gastric secretion. In 3 cases the kidney had developed intermittent hydronephrosis and in 3 others there was a catarrhal affection of the kidney pelvis or bladder or both. The fact that the above syndromes were the work of the displaced kidney was proved by their nearly constant complete subsidence when the kidney had been fastened in or near its normal place. He describes the technic for this which has been in constant use in the clinic at Modena since 1898 with invariable satisfaction. It is a combination of the Guyon-Tuffier methods, fastening the kidney to the muscle.

Presse Médicale, Paris

January 21, XXII, No. 6, pp. 53-64

40 Manual Training for the Physician. (Leçon d'ouverture: chaire d'opérations et appareils.) A. Broca.

January 24, No. 7, pp. 65-76

41 Closed Tuberculosis of the Kidney. Ehrenpreis.
42 Systematization of Lesions in Ordinary Pulmonary Tuberculosis. Chirent.
43 Serodiagnosis of Cancer. R. Erpicum.

Revue de Médecine, Paris

January, XXXIV, No. 1, pp. 1-79

44 The Antigen Reaction in Tuberculosis. (La réaction de l'antigène.) R. Debré and T. Paraf. To be continued.
45 Cancerous Meningitis. G. Humbert and W. Alexieff. Commenced in preceding volume.

Revue Médicale de la Suisse Romande, Geneva

January 20, XXXIV, No. 1, pp. 1-88

46 Cysts in Mesentery and Spleen. (Kyste du mésentère et kyste de la rate.) Weith.
47 *Cancer of the Thyroid. X. W. Kovarsky. Commenced in preceding volume.
48 Compulsory Notification of Tuberculosis in Italy in Fifteenth Century. A. Cramer.
49 *Viability of the New-Born. R. Chapius.
50 Roentgen-Ray Cancer. (Histoire d'une radiodermite chronique) C. Dubois.

47. **Cancer of the Thyroid.**—Kovarsky's monograph is based on thirty-three cases of malignant disease of the thyroid with the case-histories of most of them. No constant connection could be discovered between the type of the cancer and its clinical course. Nine of the sixteen patients with epitheliomas were men and two of the five with sarcomas. The youngest patient was a boy of 13. As a rule the thyroid malignant tumor develops slowly and insidiously, and a year or two or more may elapse before the tumor begins to cause inconvenience. Then it begins to grow rapidly and interferes with speech and swallowing and the general health suffers. Metastasis in various organs is frequent, but Kovarsky found only one instance of a metastasis in bone tissue. A carcinoma developing in a ductless gland is necessarily in close connection all the time with the blood vessels, and hence there is a greater tendency to obstruction of the veins with particles of cancer-tissue and to blood-borne metastasis. In the four cases of pavement-celled carcinoma, supposed clinically to be primary growths, necropsy revealed a primary focus elsewhere.

49. **Viability of the Prematurely Born.**—The legislation on this subject needs revision as in case of inheritance of property or question of paternity few states would recognize as legitimate a child born at the fifth month of a pregnancy. Chapius reports the case of a child born at a little over the fifth month. Delivery had been hastened by an accident to the mother, and the child lived seventeen hours. It weighed 830 gm. and measured 28 cm. and swallowed part of what was given it. Tissier has reported the case of a child born at the sixth month who lived two months; Leclerq of Lille, a child weighing 670 gm. and measuring 25 cm. that lived twenty-one hours, but the case reported by Maunsell is probably the most extreme on record, the child weighing only 510 gm. and yet surviving for over a day. The Swiss law would not recognize any of the above children as human beings, 180 days of gestation being the legal minimal limit of viability.

Semaine Médicale, Paris

January 21, XXXIV, No. 3, pp. 25-36

51 *The Thymus and Exophthalmic Goiter. F. Rose.
52 *Induced Hyperemia in Exploratory Examination. (Les applications exploratrices de l'hyperémie active.) F. Lejars.

January 28, No. 4, pp. 37-48

53 *Genito-Urinary Tuberculosis. F. de Quervain.
54 The New Conception of Enterostomy. F. Lejars.

51. **The Thymus in Exophthalmic Goiter.**—Rose compares what has been written on this subject in various countries in the last few years, the consensus of opinion being evidently that the thymus plays an active part in a certain number of cases of exophthalmic goiter, particularly those with predominating vagotony. In operating, it seems advisable to resect the thymus as well as the thyroid whenever direct palpation during the operation reveals its presence; clinical and radioscopic examination is less reliable and may prove deceptive. At the same time Rose emphasizes that the enlargement of both the thyroid and thymus is the effect, as a rule, of a general constitutional anomaly of which the instability of the nervous system is an important factor. On account of the importance of this factor, it is indispensable to apply measures to soothe the nervous system, supplementary to whatever other measures may be adopted. Sedative drugs, hydrotherapy and electrotherapy may all prove useful, in addition to psychotherapy.

52. **Exploratory Active Hyperemia.**—Lejars comments on the important information to be derived from the active hyperemia induced in a region when it is a question of gangrene or cancer beyond. Moskowicz advised applying a constricting band to the root of the limb for a time and then noticing the exact limit of the redness that followed the influx of blood when the band was removed. Lejars operated below the knee in one case nearly five years ago on the information thus derived, when otherwise he would have had to amputate in the lower third of the thigh; there has been no disturbance since. Moskowicz later said that the blood could be expelled equally well by raising the limbs perpendicular; still later he has found that the active hyperemia following the vigorous rubbing in of alcohol is equally instructive in marking the limit of the region in which the circulation is still good. This latter method is applicable to mammary cancer also; scrubbing and rubbing alcohol and ether well into the skin causes considerable redness except where the cancer, by compressing or obliterating branches of arteries, induces permanent anemia of the skin. These zones keep pale throughout or in patches, and although there is nothing to prove that these patches of anemic skin correspond to the extension of the cancer, yet this presumption is plausible. He found with non-malignant tumors that the active hyperemia induced in this way was

uniform and regular, while it was patchy and very irregular in all the cases of malignant tumor. The only drawback is that this exploratory rubbing in of alcohol interferes with the prevailing iodin sterilization technic.

53. **Tuberculosis of the Genito-Urinary Apparatus.**—De Quervain discusses in turn the four principal forms, affecting the kidney and ureter, the bladder or the male or female genital organs. He insists that the general practitioner must make or have made a minute examination of the urine both from the chemical, the microscopic and the bacteriologic points of view whenever there is a persisting functional disturbance in the bladder or trace of blood or pus in the urine which cannot be clearly explained by some other affection. He advises removal of the kidney even when the tuberculous process is causing only slight functional disturbance. To wait for the response to a course of conservative measures is equivalent to aggravation of the local trouble and possibility of involvement of the other kidney. Expectant treatment, therefore, leads to a tardy operation or to bilateral disease. The exceptional cases of long survival on record with a tuberculous process in one or both kidneys do not modify these conclusions, for we should not base our advice on exceptions. He reiterates the importance of general treatment even after the operation, saying that the task is by no means concluded with the removal of the focus.

Beiträge zur klinischen Chirurgie, Tübingen

December, LXXXVIII, No. 2, pp. 231-422

55 Turning Back the Sternum for Access to Bleeding Vessels in Neck; Two Cases. (Blutstillung bei Verletzung der grossen Halsgefässe mit Hilfe der Aufklappung des Manubrium sterni.) V. v. Hacker.
56 Origin of Retrograde Incarceration. C. Ritter.
57 Diagnosis of Tumors of Spermatic Cord. (Geschwülste des Samenstranges.) Hanck.
58 Upward Dislocation of the Ankle. (Luxation des Fusses im Talocruralgelenk nach oben.) Wegner.
59 *Atonic Dilatation of the Kidney Pelvis and Ureter. (Atonische Dilatation des Nierenbeckens und Harnleiters.) R. Bachrach.
60 *Alleged Dangerousness of Injecting a Silver Salt into the Kidney Pelvis. (Zur Frage der Gefährlichkeit der Pyelographie.) R. T. Schwarzwald.
61 *The Carotid Gland and Its Tumors. J. E. Schmidt.
62 *Tubercle Bacilli in the Blood Stream, Especially with Surgical Tuberculosis. C. Mau.
63 *Enterostomy with Tube and Larding Needle. (Die Enterostomie nach v. Hofmeister's Spicknadelmethode.) O. Nägele.
64 Nail Extension. J. Kantak.
65 Spontaneous Dislocation of the Wrist. H. Burckhardt.

59. **Atonic Dilatation of Kidney Pelvis and Ureter.**—Bachrach states that the complete picture of dilatation from mechanical obstruction in the ureter may develop solely from atony of the ureter entailing dilatation of its walls and the consequent train of infected hydronephrosis and hydro-ureter. In one of the two cases reported the condition occurred alike on both sides. The patient with the trouble on one side alone was cured by resection of the dilated ureter and kidney; nothing could be done for the other patient except to have the ureters catheterized at regular intervals.

60. **Alleged Dangers of Pyelography.**—Schwarzwald states that in 150 cases he has had a solution of a silver salt injected into the kidney pelvis for Roentgen-ray work and the findings have been extremely instructive. No injury resulted except in one case, and in this, as well as in eight similar cases of injury from the procedure which have been reported, defective technic was responsible for the mishap. The mishaps were never serious and the kidneys recuperated apparently completely in time. He analyzes these nine cases in detail, pointing out the defects in technic in each. All agree on the importance of ascertaining exactly the amount which fills the pelvis and not injecting more than this. The signs that the capacity of the pelvis has been reached are that the patient begins to feel pain in the region and that the fluid being injected runs over and back into the bladder; this can easily be seen with the cystoscope still lying in the bladder. When the kidney pelvis is not supposed to be dilated, it is better not to attempt pyelography.

61. **Tumors in Carotid Gland.**—Schmidt reports what he thinks is the fortieth case on record of a tumor in the carotid gland. His patient was a woman of 52 who had had a small tumor in the right side of her neck for twenty years but it had recently commenced to grow and be painful. There was a corresponding tumor on the other side as large as a hen's egg and the latter was removed first under local anesthesia, and seven weeks later the other. Both tumors were in the carotid gland and one had involved the internal carotid artery to such an extent that a segment had to be resected; the other tumor shelled out without injury of the vessels. He reports considerable research on cats which demonstrated that the carotid gland could be removed without danger from loss of its functioning. His patient was in good health when reexamined a year later except that there was slight atrophy of the left half of the tongue; evidently the hypoglossus nerve had been injured a trifle in the first operation. In three of the thirty-one operative cases on record the patients succumbed later to softening of the brain, the result of disturbance in the circulation in the carotid arteries; two others had hemiplegia and ten others died from pneumonia, pulmonary edema or after-hemorrhage. A preliminary loose ligation of the artery might be advisable, and possibly in case of extensive defect, a stretch of the saphena might be implanted.

62. **Tubercle Bacilli in the Blood with Surgical Tuberculosis.**—Mau emphasizes that the results of recent bacteriologic research have demonstrated that tubercle bacilli may be found in the circulating blood with surgical tuberculous processes and long after they have apparently completely healed. Treatment should therefore be general far more and far longer than has hitherto been deemed necessary with local tuberculosis in bones or soft parts. The general treatment should be kept up for years after the local process has healed. Whether all the acid-alcohol-formaldehyd-fast bacilli seen in the blood with the microscope are really all tubercle bacilli is still a question, which only more delicate technic or inoculation of animals can hope to decide. But the findings harmonize with what we know of the nature of tuberculosis as a general infection, and justify the conception of a primary and secondary phase of the disease. In his own experience he obtained positive findings only in one of six patients with incipient focal surgical lesions—he thinks that antibodies are generated at this stage enough to keep down the bacilli in the blood. The findings were positive in 14 of 24 with florid lesions, and in 3 of 10 after healing or excision of the focus. With joint affections the findings were positive in about 50 per cent., but in nearly 100 per cent. with tuberculous kidney or testicle disease.

63. **Tube Enterostomy.**—Nägele gives an illustrated description of the method of making an opening into the bowel by means of a rubber tube which can be withdrawn later without leakage. The special advantages of this technic are the absolute continence of the outlet thus formed, the lack of any soiling of the laparotomy wound with fecal matter or fluid, the ability to utilize the tube to feed the patient and thus avoid the danger of inanition when the classic "high fistula into the bowel" refuses to heal up. The rubber tube is not brought out through the laparotomy wound but through a minute incision in sound tissue some distance beyond. The fenestrated end of the 60 cm. tube is introduced through a minute incision in the distended loop and is pushed in for 3 or 4 cm. Three or four stitches are taken through the bowel wall and tube to hold it in place, the ends of the threads brought outside but not tied. Then the other end of the tube is fitted into the handle of a special harpoon needle, made like an ordinary kitchen larding needle. The needle is then forced along horizontally through the abdominal wall—generally through the left rectus—until it can be conveniently brought out through the skin, trailing the tube after it. The suture threads sustaining the loop and tube are then brought out and tied over rolls of gauze, and the result is a permanent outlet for emptying the bowel or supplying nourishment. At any time later, by cutting the threads, the tube is released and can be easily drawn out entirely, the folded-in edges of the hole in the gut closing automatically and spontaneously after it. The simplicity and safety of this method justify its application far more extensively than has hitherto been

deemed possible, using it as a preliminary and in prophylaxis, not waiting until it is a last resort.

The method has been in constant use in Hofmeister's service for ten years and at Stuttgart for six. Eloquent testimony as to its superior advantages is afforded by Nägele's comparative summaries of fifty cases in which the method was applied and of twenty-three other cases in which the ordinary technic for enterostomy was followed, with its usual train of evils, infection of wound, eczema, serious secondary operation and bad condition of the tissues for the latter—all of which is avoided by the non-leaking tube technic. Unfortunately the latter cannot be applied when the gut is too much damaged or too friable to be thus drawn up to the skin. It is particularly useful as a preliminary or prophylactic measure and also for feeding purposes with jejunostomy or gastrostomy, or for opening an outlet from the bladder. The latter use for it, however, Nägele remarks, "is another story."

Berliner klinische Wochenschrift

January 26, LI, No. 4, pp. 145-192

66 *Recurring Colic in Upper Abdomen in Children. (Sogenannte recidivierende Nabelkoliken der Kinder.) H. Küttner.
67 Magnesium Sulphate in Experimental Tetanus. H. Stadler and W. Lehmann.
68 Staphylococcus Sepsis after Furunculosis. H. Cassel.
69 Torticollis from Bone Growth. (Fall von ossärem Schiefhals.) G. Müller.
70 Thorium X in Pernicious Anemia. Arneth.
71 Treatment of Sciatica with Gymnastic and other Exercises in Full Bath. (Behandlung der Ischias mit Bewegungsbädern.) L. Brieger.
72 Kidney Functioning with Anuria from Reflex Action. M. Ghiron.
73 Experimental Cirrhosis of the Liver. M. Lissauer. Commenced in No. 3.
74 Physiology of Proteins. (Neuere Arbeiten über die Physiologie der Eiweisskörper.) P. Rona.

66. **Recurring Colic in Children.**—Küttner does not agree with Moro in his view of the recurring disturbances in the upper abdomen in certain children (summarized in The Journal, January 31, p. 420). Küttner's experience indicates rather that these recurring disturbances and also periodical vomiting and transient disturbances in micturition all are traceable to mischief in the appendix, and all can be cured by appendicectomy. Disturbance in the appendix region is liable to make itself manifest first at the umbilicus, not only in children but in adults as well. The trouble in the appendix in this case is less of an inflammatory than of a mechanical nature; the appendix may be abnormally long and get twisted or kinked occasionally or permanently, or it may spasmodically contract. The permanent cure of the recurring umbilical colics after removal of the appendix is the best testimony to the connection between them, and he relates six typical cases of the kind.

One of the little patients was Küttner's own child, an otherwise healthy little lad, who suffered from these recurring umbilical colics. An eminent pediatrist diagnosed the case as the "hypersensitiveness of a neuropathic child." The attacks grew less frequent and less severe in time, but in their place the child had periodical attacks of vomiting. As there was nothing otherwise to suggest a neuropathic disposition, Küttner returned to his first suspicion of appendix mischief, but nothing could be detected wrong in the appendix region. Then suddenly from a clear sky, six years after the first signs of the umbilical colic, the child developed gangrenous appendicitis. The appendix was unusually long but not adherent and in apparently normal condition except for gangrene in the middle part. The boy then confessed for the first time that he had had pain in the umbilicus region with his attacks of vomiting, and that it also pained him to urinate at these times. If the boy had told of this, an interval operation would have been done without fail, and he would have been spared his gangrene, as Küttner regards this occasional pain at urination as almost a certain sign of appendicitis if there is nothing else to explain it.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 24, XLIV, No. 4, pp. 97-128

75 Sanitary Conditions in Switzerland a Century Ago. F. Zimmerlin.

Deutsche medizinische Wochenschrift, Berlin

January 22, XL, No. 4, pp. 161-208

76 *Acute Threatening Affections of Spinal Cord and Medulla Oblongata. Grober.
77 Treatment of Disease of Eustachian Tube. A. Denker.
78 Determination of Typhoid Bacilli in the Urine with Aid of Berkefeld Filter. A. Denker.
79 *Parasacral Anesthesia.. R. Tölken.
80 Congenital Syphilis and Serodiagnosis. R. Ledermann.
81 Agglutination of Spermatozoa by Serum; Most Intense with Serum from Myoma Patients. (Ueber die Spermareaktion.) C. Sakaki.
82 Thermotherapy in Gonorrhea. R. Bromberg.
83 Technic for Examination of Sputum. (Zur Technik der Antiforminmethode.) Gettkant.
84 Technic for Phototherapy. (Die Vor- und Nachteile in der Anwendung verschiedener Apparate zur Phototherapie.) L. Freund.

76. **Acute Spinal-Cord and Medulla Disease.**—Grober reiterates the importance of having the victim of an accident to the spine taken at once where he can have proper care, and he urges physicians in small towns to see to it that provisions for this are available. In the typical case he takes as the basis for his lecture, fully three hours had elapsed before the man reached the hospital, the town (Jena) not having the ambulance facilities of the large cities. The spine was fractured at the eleventh thoracic vertebra and protruded, and the first thing he did was to relieve the pressure here by having a ring water-bag slipped under the spine. If a ring water-bag or air-cushion is not available, hay or straw can be twisted up into a ring for the purpose; it must be big enough. Besides the ring air-cushion, he had the patient placed on a water-bed to prevent all danger of resting on the fractured part of the spine. The soft parts here must also be protected against injury and he takes great pains to harden them, washing off the exposed regions with aqueous solutions of tannin or alcohol or cologne water, applied twice a day, when the patient has to be moved for cleansing or catheterizing. The injured region must be kept as still as possible.

The pressure on the cord may sometimes be reduced by stretching the spine, but he advises to wait for this until the patient has had a few days to recuperate. When operative measures are required, it is better not to delay; they may do great good in appropriate cases but in others they may bring the patient into great danger. In case of hemorrhage in or near the spinal cord, ice-bags, cupping or the actual cautery might prove useful, but Grober denounces them as a rule because they conflict with the principle of treatment which he advocates, namely, absolute quiet. If the hemorrhage keeps up, gelatin might be given in subcutaneous injections. He says of acute myelitis, etc., that the same principle of relieving and reposing the spine applies here also.

His experience with epidemic poliomyelitis has repeatedly confirmed the great advantage of giving large doses of calomel in the first days of the infection, even when the fever was briefly transient. Ice-bags relieve but do not seem to modify the disease process. He believes that acute ascending paralysis is merely one form of infectious poliomyelitis; in a number of the epidemic cases in recent years the disease developed with the clinical picture of Landry's paralysis. When the paralysis involves the respiratory muscles, there is always a forlorn hope that by tiding the patient along with artificial respiration the paralysis may finally subside. Rhythmic faradization of the phrenic nerves might serve the purpose. With myelitis of other types, treatment for syphilis may remove the cause; other indications are to protect against bedsores and development of deformities, having the patient drink copiously to keep the bladder well flushed. With bulbar paralysis, atropin may arrest the tormenting salivation; the swallowing muscles may be trained to act better by passing a galvanic current through them, inducing twenty swallowing movements at a sitting once a day with a current of 10 or 20 milliamperes. He discusses further caisson sickness and spinal meningitis, reiterating in conclusion that the nursing, the care of the patient, is the main thing to ward off complications with spinal cord trouble and tide the patient past the danger points.

79. Parasacral Anesthesia.—Tölken reports his experiences with Braun's technic for blocking the nerves as they emerge from the sacrum. The technic is exceptionally simple and

easy as the bony landmarks are so prominent. He has applied the method in forty-two cases for various operations on the organs of the small pelvis, external genitals, peritoneum and floor of the pelvis, perineal prostatectomy and excision of rectal cancer—in short, for all operations within the domain of the sacral plexus. The anesthesia was perfect in all but one case, and even in this, general anesthesia did not become necessary. No disagreeable by-effects were noticed.

Jahrbuch für Kinderheilkunde, Berlin

January, LXXIX, No. 1, pp. 1-122

85 A New Clinical Picture: Large-Celled Glandular Degeneration. (Ein unbekanntes Krankheitsbild.) A. Niemann.
86 Case of Congenital Atresia of the Anus. H. Illgenreiner.
87 General Paralysis in Ten-Year-Old Boy with Necropsy. A. Collett.
88 Treatment of Rickets. (Rachitis.) E. Schloss.
89 Case of Scarlet Fever Complicated by Meningococcic Meningitis; Recovery. Z. v. Barabas.
90 Course of Tuberculin Skin Reaction in Children. J. Cronquist.
91 Milk *Coagula in Infants' Stools.* V. *Poulsen.*

Medizinische Klinik, Berlin

January 25, X, No. 4, pp. 137-182 and Supplement

92 Tuberculosis in Childhood; Prophylaxis and Treatment. E. Müller.
93 *Pulsus Paradoxus and Lordotic Albuminuria. F. Gaisböck.
94 *Cardiospasm. A. Eschbaum.
95 Vagitus Uterinus. R. Franz.
96 Casein-Calcium Milk for Infants with Nutritional Disturbances. (Caseincalciummilch.) C. Beck.
97 Dispensary Tuberculin Treatment. E. Suess.
98 Diathermia in Lupus. O. Salomon.
99 Dialysis Serodiagnosis in Psychiatry. V. Kafka.
100 Otogenous Abscess in Temporal Lobe. R. Leidler. Concluded.
101 Cultivation of the Pale Spirochete. Sowade.
102 *Arteriosclerosis. L. Aschoff.

93. **Abnormal Pulse with Orthostatic Albuminuria.**—Gaisböck noticed irregular or intermittent pulse in all of the eleven cases he reports of lordotic albuminuria. The patients were from 14 to 30 years old, about half being over 20. Albuminuria developed in all when they assumed the lordosis position, and tube-casts also appeared in the urine in some under these conditions, so that we must accept a lordotic cylindruria as well as lordotic albuminuria. The irregularity observed in the radial pulse probably occurs in the same way in the pulse in the renal arteries, and this entails the albuminuria and tube-casts.

94. **Treatment of Cardiospasm.**—Eschbaum reports a case in a previously healthy woman of 24 free from neuropathic tendencies. He describes the long list of measures applied and means of treatment—all to no avail, and nothing was left but gastrostomy as a last resort. Just before the contemplated operation, however, he had the patient swallow an inflatable bag. After it was in the stomach he inflated it to the maximum and then pulled it by main force back through the cardia. He did this twice in one week, and the spasm of the cardia was conquered and there has been no further disturbance during the nine months since. Of course, he adds, there is some danger connected with this forcible procedure, but no more than with the gastrostomy otherwise necessary.

102. **Arteriosclerosis.**—Aschoff presents clinical and experimental evidence to sustain his assumption that arteriosclerosis is an example of the pathology of the intercellular substance. The loosening up of this intercellular cement substance permits penetration of blood-plasma, with consequent deposits of cholesterol or calcium as the case may be—the result being the condition we call arteriosclerosis.

Mitteilungen aus dem Grenzgebiete der Med. und Chir., Jena

XXVII, No. 3, pp. 359-574. Last indexed Jan. 31, p. 419

103 *Typhoid Fever in the German Army. F. Meyer.
104 *Differentiation of Abdominal Diseases by Symptoms on the Part of the Vegetative Nervous System. A. Thies.
105 Causes of the Eye Symptoms in
die Erklärung Landströms über
symptome bei Morbus Basedow
106 *Chronic Juxtapyloric Ulcer. (Z
des Magengeschwüres. II.) S. Kemp.
107 *Diagnosis of Stomach Disease. (Moderne Magendiagnostik.) V. Schmieden, R. Ehrmann and M. Ehrenreich.
108 Circumscribed Chronic Traumatic Serofibrous Spinal Meningitis. H. Oppenheim and F. Krause.
109 *Changes in the Heart after Direct Massage through the Diaphragm. (Die Veränderungen des Herzens nach direkter transdiaphragmatischer Herzmassage.) H. Boehm.

103. **Typhoid Fever in the German Army.**—Meyer tabulates under various headings all the cases of typhoid and its complications in the German army from 1873 to 1910, comparing them with similar data from the French, Austrian and Italian armies. In the Prussian army the proportion of incidence of typhoid has dropped from 6.7 per thousand in 1882 to 0.4 in 1909, while the corresponding figures in the French army are 16.6 and 3.4; in the Austrian, 10.6 and 1.7, and in the Italian, 8 and 4.1 (1902). The list of complications traced to the typhoid bacillus is a long one, over fifty-four in all, including embolism, gastric hemorrhage, pericarditis, aneurysm of the aorta, severe pulmonary affections, middle ear disease and epilepsy.

104. **Differentiation of Abdominal Diseases by Symptoms on the Part of the Autonomic Nervous System.**—Thies calls attention to the instructive information afforded in various abdominal affections by the symptoms of hyperemia, secretion, etc., resulting from irritation of the vagus nerve or its antagonist by the local morbid process. He has been making a special study of the subject of recent years and summarizes thirty cases of gall-bladder disease with a table showing the symptoms on the part of the vegetative nervous system which seemed to be characteristic of this affection. Severe constipation was noted in 86.6 per cent.; cold hands and feet, especially at the time of the attacks, in 83.3 per cent.; vomiting in 80 per cent.; palpitation of the heart in 73.3 per cent.; itching of the skin, general or localized, in 66.6 per cent.; imperious desire to urinate in 56.6 per cent.; dyspnea in 53.3 per cent.; sudden sweating in 33.3 per cent; diarrhea in 20 per cent., and increased or inhibited saliva secretion in 20 per cent. In a dubious case of abdominal disease, the discovery of one or more of the above symptoms will add presumptive evidence to the assumption of gall-bladder disease. On the other hand, with a tumor in the rectum it was not unusual to note a difference in the pupils and a wide difference in the width to which the eyelids are opened. With a gastric or duodenal tumor, he often noticed excessive salivation. With appendicitic diarrhea of unmistakably nervous origin, there was no difference in the pupils unless the appendix was turned up on the colon. With cicatricial changes in the colon, the region of the flexure or the right part of the transverse colon the pupils were found constantly non-symmetrical, while this was not the case with affections involving the cecum, the left part of the transverse colon and the upper descending colon. It is probable that many symptoms on the part of the heart with gynecologic affections can probably be explained by the same mechanism, hyperfunctioning on the part of the vegetative nervous system.

The correct interpretation of the above symptoms points the way to effectual treatment; atropin, pilocarpin, physostigmin and epinephrin have their indications as the symptoms indicate the predominant work of the vagus or sympathetic part of the vegetative nervous system. The annoying itching, for example, can be readily cured by pilocarpin. Itching is a very frequent accompaniment of gall-bladder disease. It generally comes on after the subsidence of the attack, and it does not last longer than from five to twenty minutes as a rule, coming on suddenly and disappearing equally abruptly. But with gall-bladder disease the pupils are symmetrical, which is usually not the case when there is disease in the rectum.

106. **Juxta-Pyloric Ulcer Syndrome Has Been Mistakenly Credited to Duodenal Ulcer.**—This is practically the same article which was summarized in THE JOURNAL, Oct. 18, 1913, p. 1500. The end-results in nineteen patients recently reexamined are given, all practically confirming the principles which Kemp and Faber advocate, namely, that with a juxtapyloric ulcer, regardless of whether it is in the duodenum or stomach, a simple gastro-enterostomy cures the patient of all trouble at one stroke and permanently. With ulcer at other points, resection is generally necessary.

107. **Diagnosis of Stomach Affections; Forty Operative Cases.**—This communication is the joint work of internists and surgeons and relates the details as the various means for

diagnosis were applied and the findings compared with what was found at the operation and the course of the cases later. The Roentgen pictures of nearly every case are given. Among the general impressions left by these experiences is that ulcer and hour-glass stomach generally have a long history of disturbances, from two to twelve months in 4; three to ten years in 10, and eleven to thirty-six years in 6. On the other hand, in 14 cases of cancer, the first signs of trouble had been noted only from one to seven months before in 9 cases, from eight to fifteen months in 3, and twenty-one months in 1 and sixteen years in 1. The patients with cancer had usually never had any disturbances on the part of the stomach before. One of the cancer patients was only 28 while one of the pure ulcer patients was 72. Abrupt loss of weight may occur with benign as well as with malignant disease of the stomach. Some of the gastric cancers developed with very little subjective symptoms and some of the duodenal ulcers without the alleged duodenal syndrome, while the duodenal syndrome was encountered in several cases without ulcer or with only an ulcer in the stomach. The tender point to the right of the umbilicus is seldom absent with duodenal ulcer, and very rarely found with other affections. Four patients with ulcer in the pylorus region complained that they suffered most from pain while they were at work; this pain from traction at work might be found more frequently if sought for. Only two of the cancer patients and one of the others complained of a distaste for meat. Two of the cancer patients also complained that the food stuck in the throat near the jugular vein although the cancer was in the lesser curvature. Total achylia or subacidity was found in 85.7 per cent. of the cancer cases and in 16 per cent. of the others. Ulcers and their sequels were accompanied by hyperacidity in 63.2 per cent., but with pure duodenal ulcer only in 1 of the 7 cases. The lactic-acid reaction was obtained in 57 per cent. of the cancer cases but also in 8 per cent. of the others. Occult blood was never found except with an ulcer or cancer; with the former in 57.8 per cent., with cancer in all but 3 of the 14 patients. The cancer was of the scirrhus type in 2 of the non-bleeding cancers. The gastroscope was found too dangerous for routine use; it is liable to perforate the stomach.

109. **Changes in the Heart after Direct Massage through the Diaphragm.**—Boehm has had occasion to examine the heart in four cases after direct massage had been applied, and he says that the resulting injury of the heart had been so severe that it alone was enough to explain the fatal outcome.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

January, XXXIX, No. 1, pp. 1-146

110 Neuwirth's Intra-Uterine Forceps. A. Martin.
111 Condition of the Mucous Membrane of the Uterus at the Menstrual Period. R. Schröder.
112 *The Demonstration of Protective Ferments against Bacteria by Means of Abderhalden's Dialysis. A. Fekete and F. Gal.
113 High Mortality of Appendicitis during Pregnancy. M. Rosenstein.
114 Case of Primary Carcinoma of the Tube Developing at the Site of an Old Tuberculous Focus. K Lipschitz.
115 Vaginal Celiotomy. P. Jung.
116 Relation of Nursing to Infant Mortality and Infantile Diseases. G. Hirsch.

112. **Demonstration by Dialysis of Protective Ferments against Certain Bacteria.**—Fekete and Gal used Abderhalden's technic, merely substituting bacterial albumin for placenta tissue. They found in normal rabbits' blood no ferments which digested colon and typhoid bacilli. After the injection of dead bacteria, enzymes appeared which could be demonstrated by dialysis. There were some points of difference in the enzymes but not enough so that those for colon and typhoid bacilli could be distinguished. Those for colon bacilli and staphylococci could be distinguished, however. Further experiments will be required to show whether the method can be used in human subjects for diagnostic purposes.

Münchener medizinische Wochenschrift

January 27, LXI, No. 4, pp. 169-224

117 Diabetes Not a Primary Overproduction of Sugar. F. Rolly and H. Lavid.
118 Retro- and Transduodenal Choledochotomy. F. v. Fink.
119 *Research on Benzin Poisoning. R. Jaffé.
120 *Secondary Hypophysis Tumors and their Relation to Diabetes Insipidus. M. Simmonds.
121 *Anal Fistula; Cause and Treatment. E. K. Frey.
122 Inflatable Disk for Compression of the Lung. (Versuche zur pneumatischen Lungenplombierung.) W. Schoenlank.
123 Technic for Radiotherapy. (Intensiv- oder Dauerstrahlung?) S. Löwenthal and A. Pagenstecher.
124 Animals That Think; the Terrier, Rolf. (Denkende Tiere.) K. Gruber.
125 The Bacteria Murder Case. (Ueber den Giftmordprozess Hopf.) M. Neisser. Discussed editorially, p. 704.

119. **Benzin Poisoning.**—Jaffé has been able to find only nine fatal cases of benzin poisoning on record in the literature, but he has encountered two cases himself. His experiments on guinea-pigs and rats confirmed the findings in the clinical cases, namely, that the typical injury in benzin poisoning seems to be extensive hemorrhages in both lungs. The benzin is evidently eliminated through the lungs and, if it is rapidly absorbed, so much is eliminated at once that extensive hemorrhages result, with promptly fatal outcome. If absorption occurs slowly, patches of necrosis and inflammation are found in the extremely congested lungs and also degenerative processes in the liver and kidneys. Absorption of benzin from the stomach proceeds very slowly so that when the benzin is exclusively in the stomach it may be possible to wash it out and thorough lavage of the stomach may thus save the victim's life. The amounts that proved fatal varied within wide limits, from a single swallow of benzin to 50 gm. and more.

120. **Secondary Tumors in the Hypophysis and Diabetes Insipidus.**—Simmonds states that in the course of last year, in one Hamburg hospital, he encountered four cases of diabetes insipidus accompanying a secondary tumor in the hypophysis. In two cases the tumor was secondary to mammary cancer, and he urges all to pay attention to the diuresis in case of malignant disease. He thinks it probable that the polyuria in these cases is the result of the loss of hypophysis functioning. Diabetes insipidus cannot be traced to the hypophysis in all cases, but this gland is undoubtedly responsible for it in the majority.

121. **Fistula of the Anus.**—Frey states that since 1896 operative treatment has been given at Kreeke's clinic in seventy-two cases of fistula ani. A tuberculous origin was evident in only a very few. Recent reexamination of fifty-six of the patients showed complete incontinence in three cases and partial in ten. These cases teach that the external sphincter should never be completely divided. If this seems indispensable, he advises stopping the radical operation and letting the fistula heal from above downward. It does not affect the continence to divide merely the lower fibers of the external sphincter. He emphasizes the necessity for preventing the development of a fistula when operating on an abscess. In nearly all the cases the fistula dated from an abscess near the rectum, a boil or an abscess which had opened spontaneously or been evacuated by a physician. The patients had long suffered from hemorrhoids or constipation. Frey adds that when only a small incision is made for a large abscess near the rectum, a big cavity is left and a fistula is almost certain to develop. To prevent this, he advises to incise the abscess wall through into the rectum; this, he says, will prevent development of a fistula.

Wiener klinische Wochenschrift, Vienna

January 15, XXVII, No. 3, pp. 41-68

126 *Treatment of Inguinal Hernia. (Zur Bassinischen Operation.) W. Goldschmidt and J. Philipowicz.
127 Mode of Carrying Infants as Factor in Scoliosis. (Ueber das [illegible] und die Häufigkeit der Links-
128 [illegible] urse; Three Cases. W. Ettinger.
129 [illegible] Cartilage; Two Cases. V. Frühwald.
130 *Cure of Dysmenorrhea. L. Stolper.

126. **The Bassini Operation for Hernia.**—This communication reviews the outcome after 1.518 operations for inguinal hernia at von Eiselsberg's clinic at Vienna since 1901. About 684 of the patients have been traced to date and recurrence has been found in sixty-five, but it is pointed out that in over a third of the patients in this group the records expressly

stated that the musculature was weak, atrophied or friable. Even when the hernia returned, it never was in a form that permitted incarceration, so that it may be said to have answered its purpose by warding off incarceration even although the bowel protruded a little at the point. On the whole the Bassini operation has stood the test and is regarded as extremely satisfactory except when the tissues are naturally weak or friable. When this is the case a plastic operation should be considered.

130. **Treatment of Dysmenorrhea.**—Stolper has found atropin extremely valuable in curing the tendency to painful menstruation. He explains its efficacy as owing to its relaxing influence when the autonomic nervous system is in a state of hypertonicity. The pronounced spasticity from vagal overstimulation brings on pain at menstruation, and atropin wards this off or cures it. In a certain proportion of the cases, however, it seems absolutely ineffectual; his study of this refractory group showed that they all had one feature in common, namely, an unusually high blood-pressure. He now tests the blood-pressure as a routine measure before giving the atropin; if it is found within normal range, he gives the atropin and can count confidently on the desired response. If the blood-pressure is abnormally high there is no use in giving atropin; treatment must be directed to reducing the blood-pressure, and the cause must be sought and removed. It very frequently is found in the pelvis, a tumor or inflammation in one of the genital organs or chronic constipation causing local disturbance in circulation. When the cause is removed the blood-pressure becomes normal and the dysmenorrhea either is conquered or then becomes amenable to belladonna. The women with dysmenorrhea which can be cured with atropin generally display other signs of vagotony. (See Spitzig's article in THE JOURNAL, Jan. 31, 1914, p. 364.)

Zeitschrift für Kinderheilkunde, Berlin

X, No. 1, pp. 1-80. Last indexed Feb. 7, p. 499

131 The Glycyltryptophan Test in Diagnosis of Normal and Pathological Body Fluids and in Examination of Milk. H. Koch (Chicago).
132 The Primary Lesion in Tuberculosis. (Zur Frage des Primäraffektes bei der Tuberkulose.) P. S. Chancellor (Chicago).
133 Unsatisfactory Increase in the Weight of Breast-Fed Infants Due to Disturbances in Fat Metabolism. (Ueber mangelnde Gewichtszunahme bei jungen Brustkindern.) S. Samelson.
134 Dysentery in Young Children. F. Welhe and T. Schürer.
135 German Measles. (Zur Kenntnis der Röteln.) H. Saito.
136 Treatment of Stenosis of the Pylorus in Infants. A. F. and R. Hess.
137 Relation between Thyroid, Parathyroids and Thymus Shown by Abderhalden's Dialysis. (Das thyreoparathyreo-thymische System und das Abderhaldensche Dialysierverfahren.) G. Singer.

Zentralblatt für Chirurgie, Leipsic

January 31, XLI, No. 5, pp. 185-224

138 *Phenol-Camphor Treatment of Chronic Arthritis. F. Pohl.
139 Temporary Gastrostomy. F. de Quervain and L. Levy.
140 New Common Bile Duct Formed of Engrafted Vein. L. Stropeni and G. Giordano.

138. **Phenol-Camphor Treatment of Chronic Arthritis.**—Pohl warns that the injection must be made only into the joint, never directly into the blood stream or the spongiosa of the bone. He also warns that it is generally better not to make the injection into the small joints on this account. The action of the injection is general, so its effect is felt by the smaller joints. Further experience has convinced him that the alcohol, rather than the camphor, is the important factor, and consequently he has reduced the proportion of camphor since his earlier publications on the subject. His formula now is 30 parts phenol, 10 parts camphor and 30 parts alcohol, and instead of injecting 0.02 c.c. at one point he injects only a fourth or eighth of this dose. The larger amount is necessary, however, for streptococcus processes, and the original formula (see THE JOURNAL, 1913, lxi, 73) is more effectual than the above modification. By using smaller doses and refraining from applying the method to the smaller joints, he thinks there need be no fear of mishaps like the two recently reported by Schulz. He injected 0.05 c.c. of the original formula in the shoulder of a young man and in a few minutes the patient screamed, became unconscious, with convulsions and lockjaw, total arrest of respiration, intense cyanosis and loss of pupil reflexes, but the pulse kept fast and full. The jaws had to be pried open for artificial respiration; under oxygen and heart stimulants the alarming symptoms gradually subsided. The same symptoms were observed also in a second case; this patient was an otherwise healthy man of 54 with a subacute inflammatory process in a deformed foot. About 0.03 c.c. of the original formula was injected, but the trocar evidently got into the spongiosa instead of between the articulating bones, and the same train of symptoms followed as in the first case. It left headache and stupor for some time afterward and disturbance in vision.

Zentralblatt für Gynäkologie, Leipsic

January 31, XXXVIII, No. 5, pp. 193-224

141 The Outlook for Radiotherapy. (Zur Klärung der "Aktinotherapieprobleme" bei Karzinom.) E. Bumm.
142 Eclampsia after Removal of Ruptured Uterus at Term. E. Zweifel
143 Misleading Statistics in regard to Eclampsia. (Zur Schnellentbindung bei der Eklampsie.) F. Lichtenstein.
144 Normal Pregnancy carried to Term with Gauze Sponge in Uterus for Over a Year. K. Kuntzsch.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 8-12, pp. 73-128

145 Intramuscular Cysts after Contusions; Two Cases. A. Mori.
146 Dietary Deficiencies. (Le avitaminosi e loro cura.) Pari.
147 *Peritonitis from Duodenal Ulcer. C. S. Materazzi.
148 Fixation of Wandering Liver. (Distopia del fegato curato con l'epatopessia.) E. Cartolari.

147. **Peritonitis from Duodenal Ulcer.**—A previously healthy man of 29 had a sudden intense pain in the upper left portion of the abdomen, radiating to the lumbar regions, with a sense of oppression in the lower abdomen on both sides. Under salol all disturbances subsided in six days and the patient supposed he was entirely cured. Five months later the sense of oppression returned, followed by pain on both sides, which yielded anew to drugs, but returned in an aggravated form after two months, with blood in the stools and general depression. There was a dull ache in the lower quadrants of the abdomen, extending upward on the left with tenderness. Only the assumption of peritonitis would explain these symptoms and the gradual increase in the girth. The dragging course had a depressing influence so that the patient begged for an operation, and this revealed an unsuspected duodenal ulcer as the source of the trouble. There had never been any vomiting, tardy local pain in the epigastric region after eating, or any spreading of the pain toward the right—so that duodenal mischief had been erased from the probabilities.

Policlinico, Rome

January 25, XXI, No. 4, pp. 113-148

149 Sodium Chlorid in Kidney Disease. (Intorno all'azione del cloruro di sodio sui reni normali e patologici.) C. Longo.

January, Surgical Section No. 1, pp. 1-52

150 Experimental Intrathoracic Surgery, Aside from the Heart. O. Uffreduzzi.
151 *Plastic Operations on the Vas Deferens. (Innesti sul deferente.) A. Pignatti. Commenced [illegible]
152 Attempt to Transplant Part of [illegible] di omo-necrotrapianto emiarticolare [illegible] -nale dell'omero eseguito in un caso di resezione dell'estremita superiore dell'omero per sarcoma.) G. Serafini.
153 Resection of Optic Nerve for Tumor in its Sheath, Retaining the Eyeball. E. Bartolotta.
154 *Osteogenetic Action of Osmic Acid. M. Segrè.
155 Osteofibroma of Upper Jaw. U. Camera.

151. **Plastic Operations on the Vas Deferens.**—Pignatti reports success in eight of eleven experiments in this line, including five autoplastic operations. The vas deferens was restored and became permeable and continent. The results were more satisfactory when the stumps of the vas deferens were invaginated in the implanted segment of artery or vein rather than when the segment was implanted by direct anastomosis. The stumps of the vas deferens proliferated until there was an epithelial lining throughout the graft.

154. **Effect of Osmic Acid on Bone Production.**—Segrè had his attention attracted to this subject by the remarkable effect of local injection of osmic acid in a case of ununited

fracture of the leg. It had obstinately refused to heal under the usual measures perseveringly applied for six months. Roentgenoscopy confirmed the lack of consolidation in both tibia and fibula. Then 0.02 c.c. of osmic acid in a 1 per cent. solution was injected directly into the focus. There was not much pain from it or local reaction but the temperature rose a trifle. The injection was repeated to a total of four times in fifteen days and the fracture rapidly consolidated so that the patient was discharged two weeks later. Segrè then experimented on twelve rabbits, injecting osmic acid into the focus of a fracture, the results confirming the assumption that osmic acid has a decided stimulating action on the periosteum and the bone marrow. He does not think that it starts an actual process of ossification, but it induces inflammation which modifies conditions and starts the cellular elements to hyperfunctioning. In his experiments the gaps filled up with an exuberant growth and the marrow canal at some points seemed narrower.

Riforma Medica, Naples

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Rivista Ospedaliera, Rome

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163 The Pathology of Alcoholism. E. Marchiafava.
164 The Danger from Lumbar Puncture with Fracture at Base of Skull G. Giorgi.

Brazil-Medico, Rio de Janeiro

January 1, XXVIII, No. 1, pp. 1-10

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Meditsinskoe Obozrienie, Moscow

LXXX, No. 18, pp. 553-650

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171 *Modern Methods of Treatment of Hypertrophy of the Prostate, and Results. S. Rubasheff.
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No. 19, pp. 651-730

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Hospitalstidende, Copenhagen

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The Journal of the
American Medical Association

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Vol. LXII, No. 11 Chicago, Illinois March 14, 1914

MEDICINE A FUNCTION OF THE STATE*

ARTHUR DEAN BEVAN, M.D.
Chairman of the Council on Medical Education of the American Medical Association
CHICAGO

INTRODUCTORY

The Council on Medical Education nine years ago formulated a standard of medical education which it believed should be adopted in this country as a minimum standard. This standard was approved by the American Medical Association in 1905 as the standard which should ultimately be adopted. It is as follows:

1. Preliminary education sufficient to enable the candidate to enter our recognized universities.
2. A five-year medical course, the first year of which should be devoted to physics, chemistry and biology, this year to be taken either in a school of liberal arts or in the medical school.
3. A sixth year as an intern in a hospital.

PROGRESS IN NINE YEARS

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age and finish their hospital internship at 25. A full college education was recognized as a desirable preparation for a limited number of men, but it was agreed that it should never be made an absolute requirement for admission to the study of medicine, as it would make the age of graduation 27 or 28 years — too old an age for the physician to begin medical work.

For the last nine years the Council on Medical Education and this conference have worked steadily and untiringly to bring about the adoption of this standard, and they have succeeded so far that this general adoption is now clearly in sight. When the conference began its work there were 28,000 medical students in this country. There were last year but 17,000. Then there were 160 medical colleges; now there are but 100. Then there were but four schools requiring more than a high-school education for admission; now there are eighty. Then no state licensing board required more than a high-school education; now sixteen state boards require one or two years of college work, including courses in physics, chemistry and biology. Nine years ago only a limited number of men secured hospital internships; now almost all the men graduating from the better schools serve a year or more as a hospital intern. Twenty-six state boards have withdrawn recognition from the twenty-five or thirty poor schools which are not doing acceptable work. We are clearly in sight of American standards of medical education which will not only be satisfactory, but which will compare favorably with those of England, France and Germany.

IMPROVEMENTS INSPIRED BY MEDICAL MEN

These improvements in standards have been accompanied by great improvements in the laboratory and clinical facilities in our medical schools, by the passing of the proprietary schools and by the development of the university medical school, especially the medical school as a part of the state university. Almost all that has so far been accomplished in medical education in this country has been the result of work by the medical men themselves. Very little assistance has been secured from persons outside of the profession. For a time a good deal of effort was made to secure private endowment for medical education, but with little success except in a few fortunate instances.

STATE SUPPORT OF MEDICAL EDUCATION

Until recent years wealthy philanthropists have not favored medical education as they have general education, theology, hospitals and libraries. There was a long period in the world's history when literature, art and education flourished only under the support of some rich patron and were objects of his favor and caprice. In this country as medical schools emerged out of the proprietary school stage and sought university connections, some of them turned to private persons for financial support, and in some instances such private support has been secured. On the whole, however, medical schools have not been able to secure adequate financial support from private endowments. Furthermore, a comparative study of the medical schools of the world gives no reason to expect adequate support for medicine from private endowment. Nor is it desirable that medicine should depend on private support. There will always remain the great privilege and great opportunity for private endowment to assist medical education, medical research and medical charities, but the scheme of modern medicine can no longer wait for private endowment.

Medicine has become not only a function of the state, but also one of the most important functions of the state. The time has now come when the medical profession should no longer look to private endowment but to the state for the support of medical education and research. In the interest of the people we should demand adequate state support for medicine in order that medicine in return may properly perform its great function to the state and that the people may benefit from the great possibilities offered by preventive medicine, intelligent medical practice and medical research.

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[*] Portion of chairman's address at the Tenth Annual Conference of the Council on Medical Education, Chicago, Feb. 24, 1914.

MEDICINE, A FUNCTION OF THE STATE

I wish to present for your consideration this thought: Medicine, a function of the state. In order to obtain the proper perspective of this subject let us analyze the situation of medicine and medical education in the older countries of Europe.

Most of the European universities were founded as private institutions under the patronage of this or that archbishop or duke or as free universities in certain cities. Many of them were religious institutions, Catholic, Lutheran, etc. In the course of years almost all of these universities have become state institutions, and inasmuch as the medical schools of Europe with few exceptions are the medical departments of universities, what is true of the universities is also true of the medical schools. If we look over the medical schools of Europe we shall find that the following is the situation:

In Germany all .universities are state institutions; in the ten Prussian universities each medical student costs the state from $450 to $500 a year for his education.

In Austria, Hungary and Switzerland all are state institutions.

In Holland, all are state institutions except one, a municipal university at Amsterdam.

In Denmark, the University of Copenhagen receives state aid.

In Sweden, all are state universities.

In Norway, all are under state control.

In Great Britain, the universities were created as private institutions but are rapidly passing under state control with the exception of Oxford, Cambridge and a few others.

In France, all are state universities or under state control.

In Belgium, there are state universities at Ghent and Liege, a free university at Brussels, and a Catholic university at Louvain.

In Italy, there are sixteen state universities and four free universities.

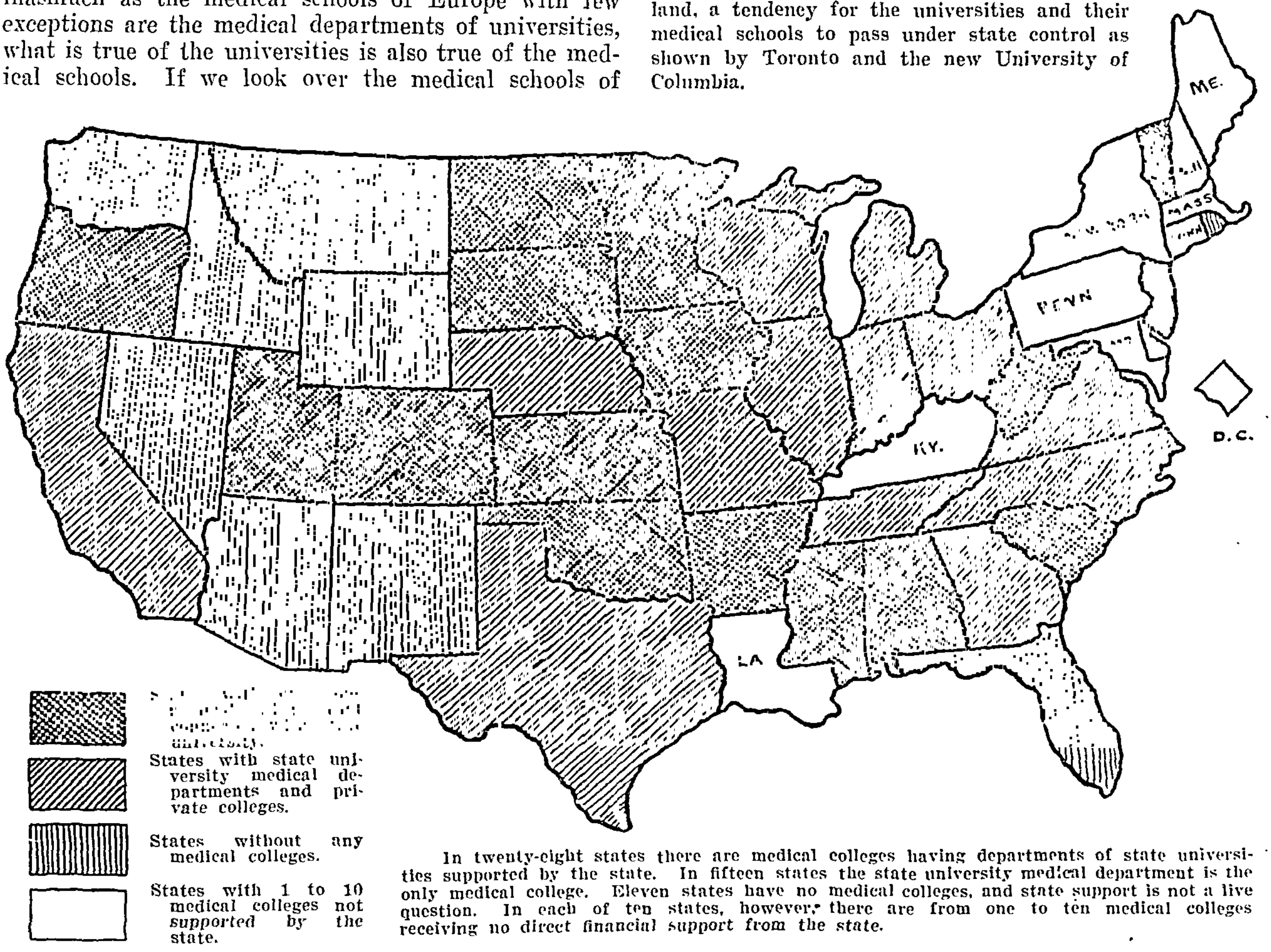
In Spain, Portugal, Russia, Greece and the Balkan States, *all* are state universities.

In the South American Republics, as a whole, all are state universities or under state control.

In Japan, all are state universities.

In Australia, all have state aid.

Canada has eight medical schools. The University of Toronto is a strong university under state control. The new University of British Columbia is being developed with state aid; the other universities are private institutions, and, with the exception of McGill, all have comparatively weak medical departments. There is in Canada, as in England, a tendency for the universities and their medical schools to pass under state control as shown by Toronto and the new University of Columbia.


ME.
MASS
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D.C.
[illegible] university.
States with state university medical departments and private colleges.
States without any medical colleges.
States with 1 to 10 medical colleges not *supported* by the state.

In twenty-eight states there are medical colleges having departments of state universities supported by the state. In fifteen states the state university medical department is the only medical college. Eleven states have no medical colleges, and state support is not a live question. In each of ten states, however, there are from one to ten medical colleges receiving no direct financial support from the state.

In the United States there are fifty states, counting the District of Columbia and the Philippine Islands.

It is extremely interesting to note in the chart the extent of state control and state aid of the medical schools in these fifty states. The chart shows that there are no medical schools in eleven states and that in twenty-nine states, counting the Philippines, state funds are given for the support of medical education. Because of the very large amount which Pennsylvania gives to hospitals and indirectly to medical education we might very properly include Pennsylvania. If we include the assistance given by municipalities in the way of supporting teaching hospitals for medical education, we might also include Kentucky and Louisiana. This leaves only six states (Maine, New Hampshire, Massachusetts, Connecticut, New York and Maryland) and the District of Columbia in which medical education as a function of the state has not been recognized nor any state aid given for its support. I understand that a bill has been introduced in Maryland to create a state university. The recognition by the state of medical education as a state function has come about so gradually and so naturally that its real significance and great importance have escaped the notice of most of us. When we analyze the whole problem and review the conditions and tendencies of medicine and medical education the world over we cannot escape the conclusion that medicine is rapidly becoming an important function of the state. What will this mean? It will mean state control and state support for public health, for medical licensure, for medical education, for medical research and to an increasing extent the medical care of the helpless.

The word "state" might be used in the broader sense so as to include municipal, state or national government. The constitution provides that public health and education are reserved as functions of the individual states. The American Medical Association has for years been striving to secure a national board of health. However important this is or would be, it is overshadowed in importance by the need of securing an efficient state licensing board in each state, and the importance of securing in each state the proper development of the functions of medicine, such as medical licensure, education and research. Our big problem is to create a public opinion by a campaign of education showing the great possibilities of modern scientific medicine. We must show what good can be accomplished both for the individual and for the community by efficient public health service, by well-trained practitioners and by medical research; and when we have educated the people we will have no difficulty in securing the necessary laws, machinery and funds to make medicine, in the best sense, a great function of the state. In developing this idea we must make one absolute condition, and this is that state medicine must be under non-political control safeguarded and out of reach of politics and placed on a scientific and educational basis, just as much so as is the United States Public Health Service to-day. When this idea is properly worked out of making medicine a function of the state in a thoroughly modern and complete sense, what will it mean? It will mean, first, a state health service with well-equipped laboratories, and commissioners of health in every county of the state with large authority, giving to the people the benefits of modern preventive medicine liberally supported by state funds. It will mean, secondly, a board of medical licensure with authority to demand thorough training of candidates who desire to practice medicine in the state and with power to protect the people against medical ignorance and inefficiency. It will mean, thirdly, a strong medical department of the state university situated, if possible, in the largest center of population in the state, provided with adequate plant and necessary funds and in medical control of the great state and municipal hospitals, eye and ear infirmaries, insane asylums, special hospitals, maternity hospitals and children's hospitals, so that the educational function of these institutions may be realized. Then the patients will be benefited by high-class medical service, and medical students and nurses will be given the best possible training. Fourthly, it will mean that in association with each department of the medical school and in all these charity hospitals there will be thoroughly equipped research laboratories.

In the future when medical education has become a state function, the great advances and discoveries made in medicine in this country will come largely from the research workers in the medical departments of the state universities, from the great hospitals affiliated with them, and from the state boards of health. There should be a close working relationship between the state board of health, the county boards of health, the state university and the great charity hospitals; and, lastly, when we speak of medicine as a function of the state we must include the medical care of the submerged 10 or 20 per cent. of the population which does not and cannot provide proper medical care for itself. We are every day coming nearer the time when in this country we shall see laws enacted to provide, by some state insurance scheme, medical care for the poor as has been done for some years in Germany and as has recently been done in England. If the profession in this country is far sighted it will recognize these coming events and direct them wisely.

If this condition is brought about what will be the place of the medical schools in the older states such as Harvard in Massachusetts, Yale in Connecticut, Columbia and the others in New York? These schools will voluntarily become a part of the great machinery that will carry on properly for the state the function of medicine. Take as a concrete example Harvard. Harvard should so affiliate itself with the state board of health work of the state of Massachusetts, with the educational and research functions of the great state and municipal charities, that it can for such purposes carry on the functions of a great state medical school. In this work it should receive the support and recognition by the state.

In this conference we have almost every state of the Union represented. Let every delegate here carry back to his state this new gospel of American medicine, Medicine a Function of the State. The state board of health, the state licensing board, our great state and municipal charity hospitals and the medical department of the state university must be given adequate state support, must be put on a scientific and educational basis and must be taken out of politics and away from political influences.

122 South Michigan Avenue.

THE DANGER TO THE MAINTENANCE OF HIGH STANDARDS FROM EXCESSIVE FORMALISM *

A. LAWRENCE LOWELL, A.B., LL.B., LL.D.
President of Harvard University
BOSTON

Every professional school ought to have two distinct objects — one the recruiting of the best talent that can be obtained among young men, and the other giving to them the best preparation for the career in which they are about to take part. These two objects are not of necessity inconsistent, but they do not always go together, and neither of them should be allowed to obscure the other. It is, indeed, one of the characteristic differences between education on the two sides of the Atlantic that Europe tends to a system of competition which selects the stronger men and eliminates the weak, while we, more democratic in spirit, fix our attention almost exclusively on the process of training

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* Read before the Tenth Annual Conference of the Council on Medical Education, Chicago, Feb. 24, 1914.

that the men are to be put through. In this paper premedical education will be discussed from both points of view.

It would be presumptuous in me to question the validity of medical opinion on the content of the necessary premedical education, but one may properly inquire how well the rules adopted by this association are fitted to attain the object sought, and how far they may have the effect of excluding able men from the profession. It is needless to go so far back as the high school curriculum, because the subjects prescribed therefor are not especially premedical, and provide a good general education for any subsequent career. My concern is the rules adopted at the joint meeting last March of the Committee of the Association of American Medical Colleges and the Council of the American Medical Association about the courses to be taken in college. The requirements are one course each in physics, chemistry and biology, with a prescribed number of lectures and appropriate laboratory work; also a couple of courses in German or French aggregating three or four hours a week for the year. To what extent are these necessary or sufficient to give the preparation needed for medical study?

A concrete example will illustrate the bearing of the question. When a child, I spent a couple of years at school in France, could read the language easily and took no course therein at college. On the other hand, I took a course in German, but did not learn to read it well enough to be of any real use, and taught myself to do so in later life. If, therefore, I had sought to enter a medical school under these new rules, I should not have been qualified in French, which I could read, but might have been qualified in German, which I could not read. I say, might have been qualified, because I do not remember that the course in German was as extensive as required by these rules, but our experience at Harvard shows that this would probably have made no essential difference.

We oblige every student who does not pass an examination for entrance to Harvard College in both French and German, to take, in the language that he does not pass, a course equal to the minimum your new rules prescribe. Nevertheless, we have found the students commonly unable to use foreign books, and hence have recently required them to take an oral examination in reading either French or German. Each of them selects, of course, the language in which he is the least deficient, and yet on the average one-half of them fail. Such a result shows that the course in language your rules prescribe will by no means insure the attainment of its object — that is, the ability to use foreign books — while it may exclude a man who can use them perfectly well and has not complied with this condition for admission to a medical school for the very reason that he can use them. No doubt, the framers of these rules did not intend to compel such a man to go through the form of taking a course in a subject with which he is already familiar, and yet they made no provision for exception in his case.

Although less strikingly evident, the same thing is true in the case of the scientific requirements. Every-one knows that to pass a course with the minimum mark in one's freshman year in college indicates only a small knowledge and feeble grasp of the subject, and that even this may have disappeared well-nigh altogether by the time of graduation. But it is enough to comply with the formula, and, therefore, admits to the medical school; while a knowledge and grasp perhaps much larger, acquired by a more mature man in a shorter space of time, will not comply with the formula, and, so, will not admit. Let me explain this.

A college education which has any value in training the mind must make men more capable of grappling with difficult subjects than they were before, and, consequently, must fit them to acquire mastery of a subject more rapidly than before they went to college. If so, a man ought to be able to learn a certain amount of physics, chemistry or biology in a shorter period and with less hours of lectures and laboratory work in his senior year than in his freshman year. What is more, he will present it when it is still fresh in his mind, whereas if he has taken it as a freshman, and then spent three years on other subjects, he will certainly have forgotten a great deal of the little that he learned. Yet for admission to the medical school the prescribed course taken in the freshman year is enough, while a shorter but more efficient course taken in the senior year or after graduation is not enough. We are to ask not what a man knows, but whether he has at any time taken a course with a fixed number of hours of lectures and laboratory work. In short, you are requiring not a result but a process; you are ascertaining not whether the man has a proper preparation for the study of medicine, but whether he has gone through a régime of training which may in ordinary cases secure the result desired, but which is sometimes not necessary for the purposes, and often inadequate. You are using a rough mechanical test which is inaccurate on both sides, instead of a personal test which would be far more accurate. Surely if an elementary knowledge of physics, chemistry, and biology is absolutely essential before a man begins to study the subjects taught in the medical school, it would be possible to find out whether he has that knowledge by examining him; and surely you can trust the medical schools on your accredited list to conduct such an examination; or, if you cannot trust them, you can inspect their examination in such a way as to see that it is thorough.

The mere fact that the test by courses taken is inaccurate, in that it lets in a certain number of men inadequately qualified, is only half, and perhaps not the most serious half, of the evil. The inaccuracy works both ways, and the fact that the test by courses may be fairly effective on the average does not justify it. A dying lawyer in remorse that his eloquence had enabled many guilty men to escape is said to have consoled himself with the reflection that the same eloquence had also sent many innocent men to the gallows, so that on the average justice had been done. Like his eloquence, the rule requiring certain courses to be taken in college for admission to the medical school does a double harm. It lets in men whose scientific preparation does not reach the standard desired, and it is liable to exclude a good many excellent recruits for the profession who have not selected their courses in college with a view to a medical career.

I know that many people, and among them members of the medical profession, hold a fatalistic theory of education. They believe that men are born to be physicians and surgeons, or at least are inoculated with the virus young, so that there is no need of taking into consideration men in whom the impulse toward medicine has not displayed itself early and forcibly. But like all theories, this is only in part true. No doubt, many men select their careers at an early age, but, on the other hand, any one familiar with college students knows that it is by no means always the case. Often men of rare quality do not know what their career in life is to be until toward the close of their college years; in occasional cases not even then. Nor is medicine a complete exception to the rule. Anyone here can probably recall cases of eminent practitioners who did not decide to enter a medical school, and did not elect scientific courses in college, until too late to comply with these rules.

Some light may be thrown on this point by statistics compiled at Harvard a few years ago to measure the relative effect on work in the professional schools of high scholarship in college and of the pursuit of particular subjects of study.[1] The figures for the medical school cover sixteen years, and comprise the three hundred and sixty-five alumni of Harvard College who graduated from the school during that period.

It appeared that the proficiency in the first-year medical courses in anatomy and histology was roughly in proportion to the amount of science taken in college. But this initial advantage did not last long, and disappeared altogether when at graduation the *cum laude* was awarded for the work in the school as a whole. In fact, the percentage of *cum laude* degrees in medicine was almost exactly the same for the men who had concentrated their college electives in natural science and for those who had concentrated in other subjects. It was 51.2 per cent. in one case, and 52.1 per cent. in the other. Curiously enough the men who took less than three courses in natural science actually did a little better than those who had taken a very large amount of it.

One must not base too definite conclusions on these figures, but certainly they go far to show that a large amount of scientific preparation is not an essential, or indeed a highly important preparation for medical studies, and that a small amount is not a hindrance to successful work. No doubt a certain command of chemistry, for example, is necessary; and every physician at the present day ought to be thoroughly familiar with the principles of physics as well as of chemistry and biology. But this may be acquired in ways other than college courses.

The relation of rank in college to the work in the medical school proved, on the other hand, to be highly significant. Of the men who graduated from college without distinction only a little over one-third won a *cum laude* in the medical school; whereas, of those who achieved distinction in college, over four-fifths obtained a *cum laude* in the medical school without regard to the subjects they pursued in college, and this percentage was progressively greater in accordance with the degree of distinction attained in college. It would be interesting to have these statistics corroborated or controlled by similar ones from other institutions; but the number of cases is sufficiently large, and the figures decisive enough to show conclusively that for the study of medicine excellence in college work is more important than the subjects that have been pursued.

Now it is only for men who have done excellent work in some line in college, and who could be expected to do work of similar grade in the medical school and in the profession, that I plead. For the inferior scholars, or even the man of ordinary quality, I am not concerned. It may be unfortunate for him that he is not allowed to study medicine unless he makes up his mind to do so early in life; but it is not an injury to the profession as it is in the case of men of unusual capacity. The standard of every professional school depends quite as much on the intellectual caliber of its students as on the eminence of its professors. The intellectual power of the student body has inevitably much to do with setting the pace, with slowing down or speeding up the instruction, and no school can afford not to welcome all the men of strong mental grasp that it can get. To men of this kind the medical profession should say, "Come." It should require them to acquire, whenever possible, the preparatory training needed, but surely it should not exclude them because they do not choose their profession at an early age. Many a man of intellectual force becomes interested in some subject which he wants to continue throughout his college course, and if he determines to study medicine near the end of his college days the new rules may compel him either to drop his studies in which he has taken an interest, or to forego the possibility of entering a medical school. He is placed between these alternatives in order to comply with a formula that is no measure of his capacity and a wholly inaccurate measure of his preparation. Can we not open the road to a man of that kind, instead of shutting the door in his face because he did not take prescribed courses in the prescribed way before leaving college? In the three months of his summer vacation a man of trained mind, with habits of industry and application, can learn as much as a freshman in half a college year. Moreover, if he enters the medical school with a part, but not quite the whole, of the scientific preparation needed, he can probably make up the rest as he goes along, just as a large proportion of students always must, if they try to work at high efficiency; the important matters being on the one hand that he shall acquire the necessary preparation before he proceeds to the course for which it is required, and on the other hand that he shall not be shut out because he did not acquire it in a specified way, nor cut off for what he can do, because of disability in other subjects.

Americans are a mechanical people who trust to machinery to do their work, maintain standards and save labor. But mechanical devices as applied to human beings are apt to be defective, and in education they present, at the present day, a real danger. This runs from the top to the bottom of the educational scale. Many of our colleges refuse to appoint instructors who have not taken a doctorate of philosophy, although many of the most eminent scholars in the country have not done so, and the books a man has published are a far better criterion of his scholarly qualities than any degree granted for work done as a student. The late William James made merry over a young man who returned to Cambridge to complete his studies in philosophy, not that he came for that subject, but he was nearer to a doctorate in it than in any other, and without a doctor's degree in something he could not obtain at a certain college an instructorship in English. To such a point had pedantry been carried!

At the other end of the educational scale our school grades are so rigid that, as a rule, a bright boy or girl must go up the ladder at the pace of the average child, and therefore cannot attain to higher education until after the time when it ought properly to be reached, and may often be constrained to lose it altogether. We have at last learned to provide special schools for backward

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[1] Educational Review, October, 1911.

the value of the requirement, to indicate some of the difficulties that we must meet in enforcing it, and to make some suggestions as to the proper way of handling them.

In considering this matter the first question to arise is, What do we seek to secure by this requirement, pedagogically speaking? We have a right to expect it to do two things: (1) equip our students with a certain amount of training in, and sympathy with, scientific work and thought; (2) supply them with a certain amount of basic knowledge needed in their study of the medical sciences. Some of us, perhaps, attach more importance to one of these items than to the other; I myself consider the former of paramount importance. Furthermore, as a by-product, this requirement should diminish materially the number of men admitted to the medical school who are unfitted in respect of ability or character for the study of modern medicine. Of course it is by no means a perfect separator — indeed, no requirement yet devised is perfect in that respect.

In order to secure these benefits, what should be the nature and content of the courses in this preliminary year? From what has been said in the preceding paragraph it may be inferred that I am not so much concerned about the content of these courses as I am about the mental training to be derived from them. Has the student gained some familiarity and sympathy with scientific thought and work? Has he learned to do some thinking on his own account? Has he learned to work out some things for himself and so to rely, in some measure, on his own exertions? Can he use his eyes, his hands, and especially his head intelligently? If the character of the courses offered is such as to lead us to give affirmative answers to these questions, I do not think that we need worry very much about their content. When all has been said along this line, however, content is undoubtedly a matter of importance, and I shall indicate as briefly as possible what our experience leads us to desire in this connection.

CONTENT OF THE COURSE

Chemistry.—This subject offers comparatively little difficulty. Assuming that the student is to give but one year to his collegiate training, the course in general or inorganic chemistry offered by most colleges of good standing is fairly satisfactory Moreover, chemistry is better standardized in the colleges than are the other scientific subjects. In our experience we may safely credit the year of chemistry completed in a college of respectable standing. We are not in sympathy with a suggestion which has been made — that both organic and inorganic chemistry should be completed in this preliminary year.

Biology.—This subject is in a very unstable condition just now in our colleges. The tendency is to abandon the old course in general biology and substitute therefor a full-year course in either zoology or botany; while under the head of general biology there may be offered a course which is really high-school physiology. Again, in one college the course in zoology may be largely comparative histology, in another comparative anatomy, etc., according to the interests of the instructors. Moreover, the time devoted to the subject varies greatly. The administration of the requirement in this subject has occasioned us considerable perplexity, and in doubtful cases we have given the student the benefit of the doubt. We think that a return to something like the old course in general biology is desirable from our point of view — a course in which the student will acquire a working knowledge of some of the principal types of living beings and a conception of the great generalizations of biology. If it could be made to include the dissection of a small mammal it would be of greater technical assistance to prospective medical students. Mammalian anatomy is doubtless good anatomy, but some zoologists seem to have a more or less contemptuous opinion of any creature higher than a starfish.

Physics.—This has been our great stumbling-block, and will continue to present great difficulties if only one year of college work is required. In our best colleges the physics course is apt to be quite a difficult one in mathematical physics, in charge of an able professor, to whom physics with the mathematics left out is like the play of Hamlet without Hamlet. The average student fresh from the preparatory school, unless he has considerable mathematical talent and the ability to think in abstract terms, when he encounters this course, is in the condition of the June-bug in the poem, which could "only buzz and bump his head agin the wall." Seventeen such students tackled our course in physics one year — three of them successfully. And yet physics is so desirable for medical students, the subject is so intrinsically interesting and offers such an admirable field for mental training, that we must do our utmost to get satisfactory courses for our students. The trouble with the average good course in physics, as we see it, is not with the laboratory work; there is usually plenty of that, though possibly it could be better correlated with the lectures. The difficulty is rather due to the abstract thought required in order to comprehend physical laws. The lectures, therefore, should be followed up by searching *oral* recitations to ascertain if the subject-matter has been understood, and the opportunities thus afforded to clarify difficult conceptions and to correct misconceptions should be fully met. The laboratory exercises should be arranged, in the main, with a view to facilitate the understanding of the subject. It seems clear that the time often devoted to the solution of problems by the aid of higher mathematics should be given to other aspects of physics; and this may also be said of much of the work in electricity, mechanics and dynamics.

Modern Languages.—In our judgment this requirement should be restricted to German or French, preferably German. The college course is based on two years of high-school work, is fairly uniform and is well conducted. It may be doubted, however, if it confers a "reading knowledge"— that will depend on our interpretation of the meaning of the term. I wonder how many of us learned to read German in college. The course might be improved for our purposes if it were made very largely a reading course, especial stress being laid on sight reading, with the last semester devoted to scientific articles. The "reading knowledge," however acquired, must be kept alive during the medical course. Here journal clubs and similar agencies can be very useful.

SOURCE OF THE PRE-MEDICAL TRAINING

Our next question is, Where shall this training and knowledge be gained? We may at once omit high schools from consideration. We shall be quite satisfied if they shall be able to prepare students for the college year, a feat which very many of them in our section of the country at least, are not yet able to perform.

children, but the unusually quick child has no less a claim to be developed to the full extent of his or her capacity.

Our processes of education are inelastic, and if adapted to the ordinary person are hampering to the unusual mind. Is not this because we fix our attention too exclusively on the process, instead of on the result produced? We laugh immoderately when we are told that the condition for admission to the bar in England consisted formerly in eating a certain number of dinners in the Inns of Court, yet that rule was well intended. It was designed to measure a residence in the Inns of Court, which was supposed to be accompanied by diligent study of the law. Are we not going a little in the same direction? Many of us have sat in a faculty and heard a discussion whether a man, who had done all his college work well, should be refused a degree because he had not removed an entrance condition; in other words, whether he could be given the formal certificate of having done his college work when, in fact, he had completed it, but had not yet proved that he was capable of undertaking it. Are not we, with our regulations about taking so many courses which are passed and dismissed from the mind, putting our student in much the same position of the Cook's tourist who visits a European picture gallery, looks at the pictures starred in Baedeker, checks them off and straightway forgets them? Can we not make our measure of education something better than the touching of a watchman's clock?

We tend everywhere to set up a standard based on courses taken and degrees received, although such a standard measures only the minimum required. In Europe excellence in scholarship is now highly prized and opens the way to success. In England, for example, the honors a man achieved with his bachelor's degree at Oxford or Cambridge are never forgotten, and have a momentous influence on his prospects in life; but we pay little heed to such things. We ask only how many courses he has scored with the lowest passing grade; and this habit of mind is especially dangerous in the case of medicine, because to judge from the college records of men who have entered medical schools, the medical profession has not hitherto recruited as many men of high intellectual force as it ought to attract. It is, therefore, especially important for it to avoid formulas which may tend to exclude men of unusual capacity.

Let me repeat. I am not urging the admission to medical schools of men with an inadequate preparation, but I am arguing for a measure of that preparation which shall be a real test of a man's knowledge not solely of the courses he has been through, and which will not, for a failure to decide early on his career, keep out the man of power.

(*For discussion, see page 876*)

"Sure Cures" for Every Disease.—Many people delude themselves with the false hope that there is some drug to cure every disease. Specific remedies may be counted on the fingers of our hands. Very few therapeutic agents rival quinin for malaria, salvarsan for syphilis or antitoxin for diphtheria, but even these must be properly administered in order to obtain satisfactory results. The common belief that there is some drug that will cure every disease is fostered by unscrupulous persons who boldly advertise "sure cures" for rheumatism, pneumonia, cancer, tuberculosis, diabetes and Bright's disease. These fallacies quickly disappear when people become better informed as to the limitations of the pharmacopeia.—M. J. Rosenau, in *Vermont Med. Month.*

ADMINISTERING THE PRELIMINARY COLLEGE YEAR IN CHEMISTRY, BIOLOGY, PHYSICS AND MODERN LANGUAGE*

R. H. WHITEHEAD, M.D.
Dean of the University of Virginia, Department of Medicine
CHARLOTTESVILLE, VA.

In accepting the honor of the Council's invitation to present a paper on "The Best Method of Handling the Preliminary College Year in Chemistry, Physics, Biology and a Modern Language," I have found it necessary to modify the title. Our experience at the University of Virginia has not been such as to enable me to bring before you a plan which has been extensively tested and which may, with confidence, be recommended to others. We have, however, been in a measure pioneers in this field, we have come into intimate contact with some of the difficulties of the problem, and we have been forced to think about these difficulties and reach conclusions as to the methods of handling them.

When, in 1906, the faculty of the school which I serve decided to require thereafter a year of college work in the basic sciences preliminary to medicine, there was not a school in the entire East between Canada and Mexico, with the exception of Harvard and Johns Hopkins, which required any amount of college work for admission. The entrance requirements at large of our own university were an indefinite quantity variously estimated as from one and a half to three years of high-school work. There was no use talking of a diploma from a four-year high school, because there was virtually no such thing in the territory from which we might expect to derive students. On the other hand, conditions in the medical school were such that something had to be done, and at once. Accordingly, we announced for the next year a requirement consisting of three years of secondary-school work followed by a year of college work in the sciences. In a way, it was an absurd thing to do. We simply shut our eyes and took the plunge. We found ourselves in much the same situation as the new-born infant of a distinguished anatomist, of whom his students relate that, when the nurse inquired how he would like to have the child bathed, replied, "Just throw her in the tub, and let her work out her own technic." Precisely why we did *not* drown, I do not fully understand. The adverse conditions mentioned above were rapidly improved, however, and in 1910 we were able to introduce a requirement of fourteen units of secondary-school work, followed by a college year. During the first two or three years we were not able to reach any satisfactory conclusion as to the real value of the actual minimum requirement, because almost the only applicants who could satisfy it were college graduates, and thus the average attainments of the new men were far beyond those represented by the entrance requirement. (Let me say parenthetically that our experience leads us to dissent emphatically from many of the criticisms that have been made of the college graduate; we find him an excellent fellow to have around.) Gradually the number of new men who had entered college solely to procure the prescribed preliminary education increased, and now the bulk of the class is furnished by such men; so that we are in position to form an opinion as to the value of the requirement, to indicate some of the difficulties that we must meet in enforcing it, and to make some suggestions as to the proper way of handling them.

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CONTENT OF THE COURSE

Chemistry.—This subject offers comparatively little difficulty. Assuming that the student is to give but one year to his collegiate training, the course in general or inorganic chemistry offered by most colleges of good standing is fairly satisfactory Moreover, chemistry is better standardized in the colleges than are the other scientific subjects. In our experience we may safely credit the year of chemistry completed in a college of respectable standing. We are not in sympathy with a suggestion which has been made — that both organic and inorganic chemistry should be completed in this preliminary year.

Biology.—This subject is in a very unstable condition just now in our colleges. The tendency is to abandon the old course in general biology and substitute therefor a full-year course in either zoology or botany; while under the head of general biology there may be offered a course which is really high-school physiology. Again, in one college the course in zoology may be largely comparative histology, in another comparative anatomy, etc., according to the interests of the instructors. Moreover, the time devoted to the subject varies greatly. The administration of the requirement in this subject has occasioned us considerable perplexity, and in doubtful cases we have given the student the benefit of the doubt. We think that a return to something like the old course in general biology is desirable from our point of view — a course in which the student will acquire a working knowledge of some of the principal types of living beings and a conception of the great generalizations of biology. If it could be made to include the dissection of a small mammal it would be of greater technical assistance to prospective medical students. Mammalian anatomy is doubtless good anatomy, but some zoologists seem to have a more or less contemptuous opinion of any creature higher than a starfish.

Physics.—This has been our great stumbling-block, and will continue to present great difficulties if only one year of college work is required. In our best colleges the physics course is apt to be quite a difficult one in mathematical physics, in charge of an able professor, to whom physics with the mathematics left out is like the play of Hamlet without Hamlet. The average student fresh from the preparatory school, unless he has considerable mathematical talent and the ability to think in abstract terms, when he encounters this course, is in the condition of the June-bug in the poem, which could "only buzz and bump his head agin the wall." Seventeen such students tackled our course in physics one year — three of them successfully. And yet physics is so desirable for medical students, the subject is so intrinsically interesting and offers such an admirable field for mental training, that we must do our utmost to get satisfactory courses for our students. The trouble with the average good course in physics, as we see it, is not with the laboratory work; there is usually plenty of that, though possibly it could be better correlated with the lectures. The difficulty is rather due to the abstract thought required in order to comprehend physical laws. The lectures, therefore, should be followed up by searching *oral* recitations to ascertain if the subject-matter has been understood, and the opportunities thus afforded to clarify difficult conceptions and to correct misconceptions should be fully met. The laboratory exercises should be arranged, in the main, with a view to facilitate the understanding of the subject. It seems clear that the time often devoted to the solution of problems by the aid of higher mathematics should be given to other aspects of physics; and this may also be said of much of the work in electricity, mechanics and dynamics.

Modern Languages.—In our judgment this requirement should be restricted to German or French, preferably German. The college course is based on two years of high-school work, is fairly uniform and is well conducted. It may be doubted, however, if it confers a "reading knowledge"— that will depend on our interpretation of the meaning of the term. I wonder how many of us learned to read German in college. The course might be improved for our purposes if it were made very largely a reading course, especial stress being laid on sight reading, with the last semester devoted to scientific articles. The "reading knowledge," however acquired, must be kept alive during the medical course. Here journal clubs and similar agencies can be very useful.

SOURCE OF THE PRE-MEDICAL TRAINING

Our next question is, Where shall this training and knowledge be gained? We may at once omit high schools from consideration. We shall be quite satisfied if they shall be able to prepare students for the college year, a feat which very many of them in our section of the country at least, are not yet able to perform. Furthermore, I must doubt the wisdom of the Council's action in making it allowable for medical schools which lack *bona fide* connection with universities or endowment to attempt to do this work. Even if there were no other reason, how will it be possible for schools already struggling to keep their heads above the financial waters to do it satisfactorily? It seems quite clear, then, that we must lean heavily on that bruised reed, the American college. This is not the proper time, and I am not the proper person, to enter on a defense of the college; but it is perfectly permissible to doubt if all of the criticism which has been fired at that institution is deserved. At any rate many of us, I am sure, believe that it is still performing great service, and is capable of doing this one for us. Men *have* gone to college for the purpose of studying, lots of them are still doing so; and when young men realize that the college offers the only avenue of entrance to respectable medical schools, a very strong stimulus to work will become active.

One may ask, is not the Council, in recommending the completion in one year of four college subjects, three of which are laboratory sciences, expecting too much? It is a heavier work than is usually expected of college freshmen, but no greater, certainly, than is required of first-year medical students. The course outlined by the Council — six hours per week in each of the sciences and three hours per week in the language course — is not excessive; and, in any case, I am old-fashioned enough to welcome any provision to-day which leaves opportunities open to ability and character.

These considerations bring us into the midst of the practical difficulties of the problem. As the curriculums of most colleges are now arranged, it is practically impossible for students to get this required work in one year in such colleges. Will the colleges be able, or if able, willing, to recast their curriculums, or to modify their courses, or to offer special courses in the required subjects for the benefit of the premedical students? We may feel certain, I think, that some of them will not, and that probably others cannot, do any of these things. Some of our colleges are ultra-conservative, and so will make no concession to what they will regard as a vicious movement in education. Others who might be willing enough to assist us will be hindered by the exigencies of their circumstances, for example, small size of teaching staff, which will prevent the offering of additional courses or the serious modification of the particular courses for which there is the greatest demand. Under the conditions which exist at present in most colleges the enforcement of the requirements will mean two years of college work. In the South, for example, the requirement in modern language alone will have this result, as so many of the high schools do not offer the preparatory work necessary as preliminary to the college course. I am tempted to think that in the case of the Southern schools it would have been better, if possible, to allow English in the place of French or German for the present. Again, in the case of a considerable number of universities which have medical departments, the case has been settled, so far as those universities are concerned, by the flat requirement of two years of college work. Making allowance, however, for all of these considerations, it would seem that there would still be a large number of colleges which could and would offer the course of one year as outlined by the Council. Perhaps, too, the time is propitious; for many colleges have realized that in the too exclusive pursuit of a somewhat indefinite ideal of culture there is danger of losing touch with the living, striving world about them. We may expect that a large number of colleges would be willing to meet at least half way a movement which promises to increase their opportunity for service to their communities. In this connection I venture to suggest to the Council that the medical schools unassisted cannot be expected to work out this problem to a successful conclusion; but, it seems to me, the Council must assume the leadership and undertake an active campaign, in order that its views may be widely adopted and be put into operation by a large number of colleges.

This subject is so large that it would not be possible, without making this paper entirely too long, to discuss every point which suggests itself. There are, however, a few practical questions on which I should like to touch. Should any conditions be allowed? In our experience it is advisable to allow one condition—chemistry excepted—provided the condition is of such a nature that it can be removed before entering the second year of the medical course; nor, as a general rule, should a student be engaged in removing a condition at the same time that he is taking the full first-year medical course.

Again, shall students be admitted on certificate alone, or in the absence of satisfactory certificates, may they be admitted by passing entrance examinations? At first blush it would seem that, if an applicant is willing to demonstrate his qualifications by an examination, he should be allowed to do so; but a little reflection shows that the case is not so simple. While we might be able to determine the applicant's fitness so far as his "book learning" is concerned, it would be extremely difficult to carry out examinations which would give satisfactory data as to laboratory experience and mental training — not to mention the difficulties which would arise from the practice of admitting to such examinations students who had failed on college courses in such subjects. Accordingly, we admit only by certification in case of the scientific subjects. In modern languages the case is different, for here it is comparatively easy to determine an applicant's ability to read the language.

The certificates required should be filled out by the proper officer of the college from which the applicant comes, and should state clearly the subjects passed and the hours of class-work, lecture and laboratory, embraced in each course and the length of time in weeks devoted to each subject. It should also contain a transcript of the high-school credentials on which the applicant was admitted to the college in question. It would seem necessary to require this transcript in order to protect the high schools against a possible lowering of the bars in the case of premedical students.

Finally, who should pass on college certificates? With us this task is entrusted to the dean of the medical department, while the dean of the university passes on the high-school portion of the requirement. I regret very much that I have not had time to learn what has become, if there be any prevailing practice, the prevailing practice of our universities in this respect. In the case of the university medical departments, however, it seems to me to be immaterial whether the requirement is administered by the dean of the medical school, the dean of the university, or a committee of the medical faculty. The dean of the university is usually in possession of pretty accurate information about the colleges, gained, in large part, by actual experience with students from these colleges, and can give the proper advice in doubtful cases. We have had but little trouble on this score. I myself am inclined to think that the certificates should be passed on by the dean of the university, provided that often overburdened official will take the additional work. In the case of the detached medical schools, however, it is not so easy to answer the question. It is very doubtful if the officials of the public-school systems, to whom this work is now entrusted in many cases, have, in general, sufficient knowledge of the colleges of the country to qualify them for this work. Nor does it appear that the deans of such schools could perform the duty in a satisfactory way, since that knowledge of the work of the colleges derived from years of experience which is found at the universities does not exist there. If, however, there existed some body of definite information concerning the colleges, if certificates giving the detailed information mentioned above be required, and if these certificates were regularly checked by some competent authority, the problem would not be so difficult; and this leads me to make a second suggestion. It seems to me that this Council must add another to its list of achievements. There are many colleges in this country, good, bad and indifferent, about which reliable information accessible to all is very meager. Cannot the Council undertake an investigation of the colleges, as a result of which it could furnish to the medical schools definite information as to which institutions may, and which may not, be safely accredited? This would probably not prove such a formidable task as it may, at first sight, appear. Many of the colleges are well known and require no investigation, reliable judgments of others can be obtained from the deans of the leading universities, and perhaps only a comparatively small number would require personal inspection. Cooperation in this work might be secured with the Association of American Universities, which is now undertaking a classification of American colleges. The results of such an investigation would facilitate immensely the work of administering the requirements we are now discussing, and, incidentally, would be of much benefit to the colleges themselves.

(For discussion, see page 877)

HOSPITALS AND THEIR RELATION TO MEDICAL COLLEGES AND THE TRAINING OF INTERNS*

CHRISTIAN R. HOLMES, M.D.
Dean of Ohio-Miami Medical College of the University of Cincinnati
CINCINNATI

I realize that it is not alone the buildings of the new hospital and their arrangement which aroused interest and prompted the invitation to me to present to you the illustrations of it, but also the fact that we of Cincinnati have the unique distinction of being the first in this country to possess a strictly municipal university with the medical college an integral part thereof, and a large municipal general hospital, which is the clinical and pathologic school of the medical department — an organization resembling those found in Germany, which I believe we all agree is the best, and which, let us hope is the type that will, in the future, largely be accepted as the standard in this country.

I disclaim any desire to detract in the slightest from the praise due privately endowed or sectarian hospitals, for the splendid service they have rendered and are rendering, and grant that many of them through their fine buildings and superior equipment and excellent teaching facilities were the means of causing (by their example) great improvement in the upkeep and management of municipal institutions; yet, with few exceptions, they are not the type that furnishes the best means for teaching and developing medicine, because in most of them the number of free or charity beds is comparatively limited, and the private or pay patients are usually not at the disposal of the staff for teaching purposes to classes of medical students. Being private institutions, they can elect just what kind of diseases they will or will not admit — infectious and contagious diseases are always excluded. Many of the hospitals specialize, thus greatly restricting their usefulness to the student. To see all kinds of cases he must visit other hospitals, often far apart. We have continued to crowd more subjects into the student's curriculum until every moment is valuable. Therefore, if the student's work can be concentrated, it will mean conservation of his time and strength and greater efficiency. Nowhere can he obtain that so well as in a large general hospital where all diseases and conditions can be found and freely studied.

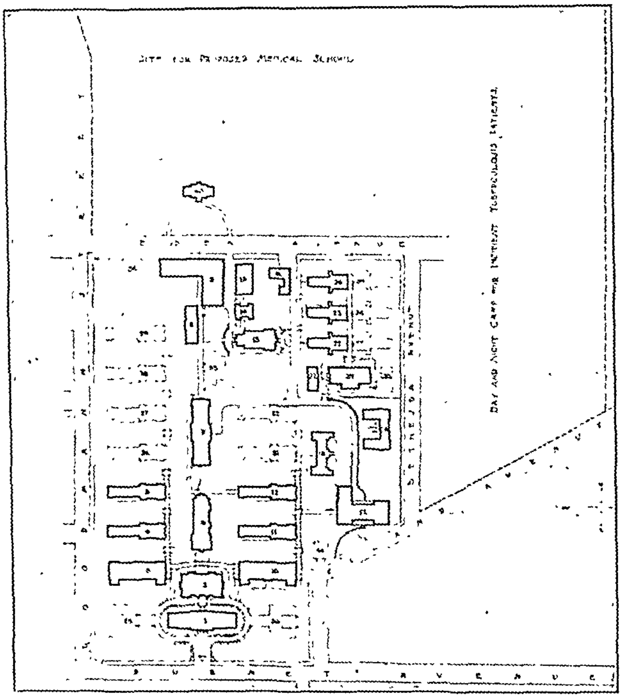
SITE FOR PROPOSED MEDICAL SCHOOL
DAY AND NIGHT CAMP FOR INCIPIENT TUBERCULOUS PATIENTS
BURNET AVENUE

Fig. 1.—Block plan of New General Hospital, Cincinnati; building schedule: 1, administration building; 2, receiving ward; 3, Ward A; 4, Ward B; 5, Ward C; 6, operating-pavilion; 7, kitchen and dining-hall; 8, male dormitory and linen-room; 9, power and laundry-building; 10, Ward H; 11, Ward J; 12, Ward K; 13, pathologic institute and chapel; 14, detention ward; 15, disinfecting station; 16, garage and stable; 17, nurses' home; 18, Ward N; 19, female dormitory; 20, administration building of contagious group; 21, isolation ward; 22, Ward O; 23, Ward P; 24, Ward Q; 25, pay ward; 26, Ward D; 27, Ward E; 28, Ward F; 29, Ward G; 30, clinic; 31, Ward L; 32, Ward M; 33, gymnasium and bathhouse; 34, superintendent's residence; 35, private ward; 36, coal yard; 37, Ward R; 38, Ward S; 39, Ward T; 40, special contagious ward.

In order that all our municipal hospitals shall render the best service, they must not alone care for the sick entrusted to them, but also aid in every possible way to broaden our knowledge of how to combat and prevent disease, and that can be accomplished only by making them *teaching hospitals*.

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* Read at the Tenth Annual Conference of the Council on Medical Education, Chicago, Feb. 24, 1914.

In Cincinnati the staff positions in the City Hospital are almost exclusively filled by members of the faculty of the medical department of the university. The appointments to the staff have since two years been made by the mayor or his service director on nominations by the staff, but he has the power to disregard their wishes.

A charter commission, elected last year, is now preparing a new charter for Cincinnati, which is to be submitted to the vote of the people this year, and, we hope, will be adopted. This commission is fortunately composed of broad-minded men who are fully alive to the best interests of the medical college and the New Hospital, and it may interest you to know how they propose to safeguard both.

The following is copied from the proposed new charter:

First: A Department of Hospitals: This department shall be managed by a board of hospital commissioners of seven members, consisting of the following:

1. The health officer.
2. The director of the Department of Social Welfare.
3. The dean of the medical department of the University of Cincinnati.
4. One person, confirmed by the mayor after selection by the board of trustees of the University of Cincinnati.
5. Three citizens to be selected by the mayor.

Each of the last four named shall serve for a term of six years. In making the first appointments the mayor shall confirm the selection of the university trustees for a term of six years, and shall appoint one citizen for two years, one for four years, and one for six years, and thereafter each of their successors shall be appointed for a term of six years. This board shall have power to appoint such superintendents as may be necessary and shall have control of the finances and business administration of all hospitals.

To best serve the citizens of Cincinnati the three objects of the hospitals should ever be kept in mind. The functions of the city hospitals are:

A. To care for the sick and injured brought to the city hospitals.

B. To assist in constructive preventive work along the lines of public health and public welfare.

C. To provide for medical instruction and research.

In order that the new hospital may serve the people of Cincinnati to the fullest extent it must be a teaching hospital, but such teaching facilities shall be open to the students of any medical college in Cincinnati which is recognized by the State Medical Board, and all city hospitals must be closely allied with the medical department of the University of Cincinnati. The university and the hospital are dependent each on the other, and unless the two go forward together neither will measure up to the greatest possible efficiency.

Second: The medical staff of the hospitals shall be appointed by the board of hospital commissioners on the *recommendation or nomination of the board of directors of* the University of Cincinnati so that the appointments will conform in a large measure to the method of the appointments of professors and instructors in the other departments of the university.

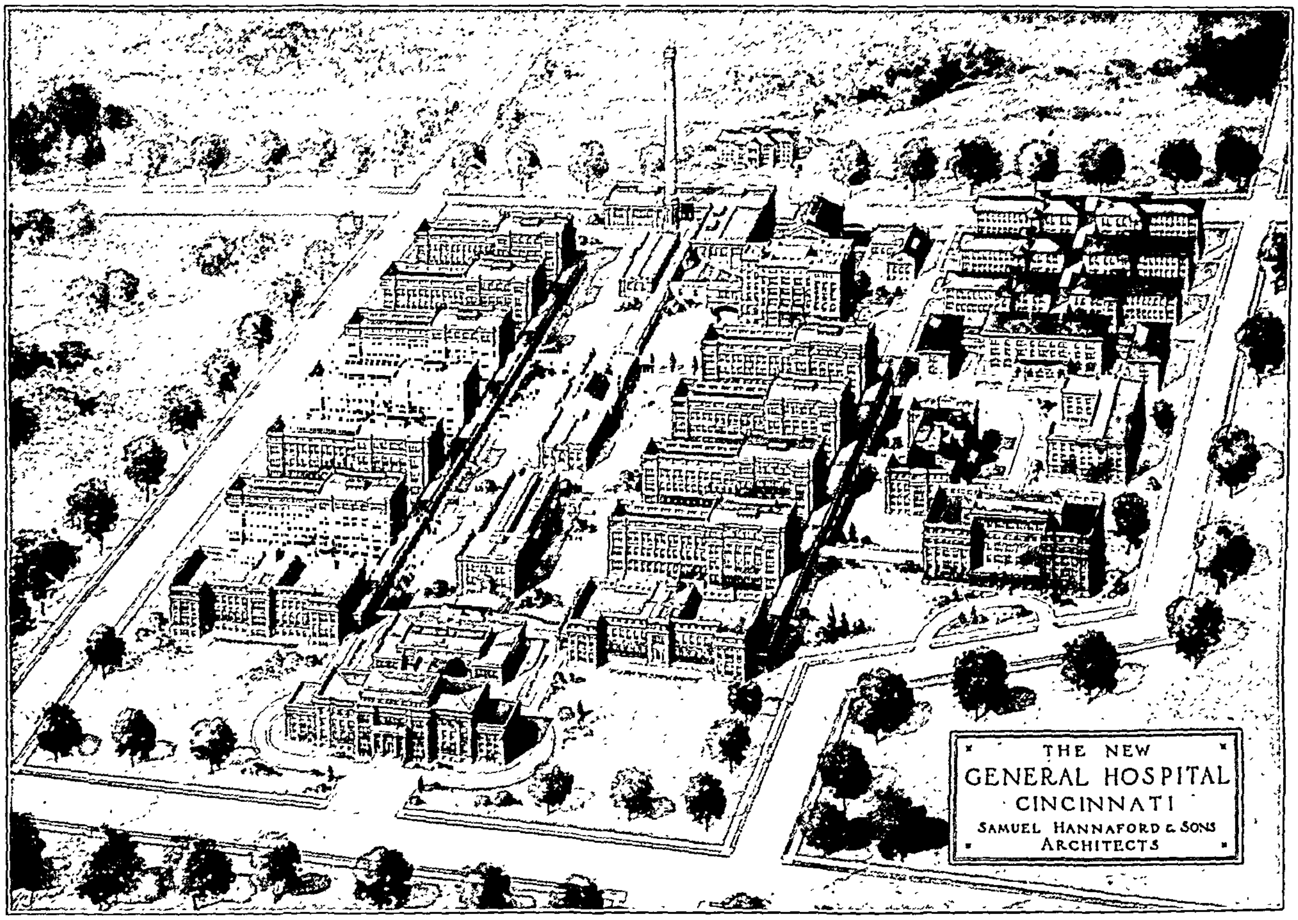

Fig. 2.—Bird's-eye view of the New General Hospital, Cincinnati.

> *Third:* The medical staff of the hospital shall have the privileges of teaching and research in the city hospitals. The board of trustees of the university shall determine the manner in which the medical departments of the hospitals shall be organized and conducted to obtain the most efficient service, the regulations under which teaching shall be done, and at what stage in their medical course the students shall be admitted to the teaching advantages of the city hospitals.

From this you will see that the medical department of the hospital is placed completely under the jurisdiction of the university, which is, as it should be, while the business administration of the hospitals is vested in a board of directors, the composition of which is, I believe, a most effective one.

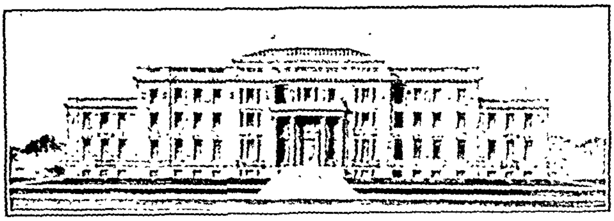
Fig. 3.—Administration building of the New General Hospital, Cincinnati.

The board of health in Cincinnati is non-political. This board appoints the health officer (a physician) selected for his ability regardless of his political tenets, and is not subject to the vicissitudes of political changes. Hence we felt that he would be a valuable member on the board.

As a rule, the municipal hospitals in this country have so far devoted themselves only to the care and cure of the sick, but have neglected the social service side, which will look after the families of the patients while the latter are in the hospital, keeping in touch with, following and aiding the convalescent patients after they leave the hospital until they again become breadwinners. It is true that in some instances private social-service organizations have rendered commendable service, but as a rule because of lack of funds and full-time workers they cannot equal in efficiency a well-organized and powerful municipal social-service organization. For that reason it was thought well to put the social-service director on the board. The dean of the medical faculty is made a member because, by virtue of his office, he should be in position to give valuable council to the board on medical questions. The other four members will probably be laymen, selected because of their business ability and influence for good in city affairs.

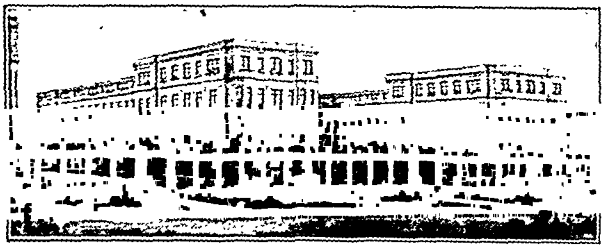
Fig. 4.—Ward buildings of the New General Hospital, Cincinnati

The hospital superintendents and all employees must pass a civil service examination, which is open to any one whether he resides in or outside of Cincinnati.

We believe that, conducted under such conditions as outlined above, the municipal hospitals in this country will rise to the exalted position which they occupy in Germany, the pride of every city in which they are located, and one of the most potent factors responsible for the supremacy of Germany to-day in the world of medicine.

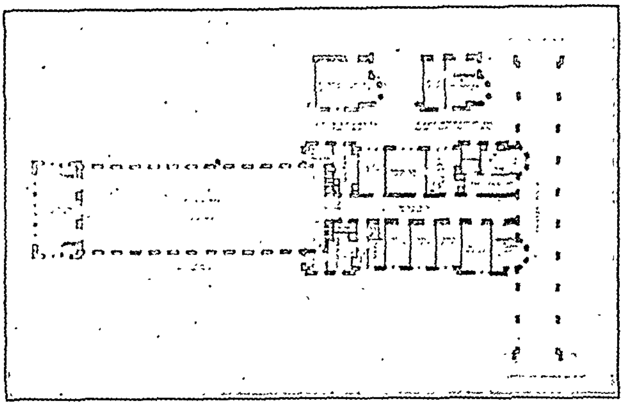
Fig. 5.—First-floor plan, typical ward building, New General Hospital, Cincinnati.

Cincinnati is fortunate in having a mayor who is in full sympathy with this movement. At a dinner given recently in honor of Professor Welch of Johns Hopkins, Mayor Frederick S. Spiegel said in concluding his address of welcome:

> In conclusion I desire to say that I am in full agreement with the efforts of our city to establish not merely a hospital but a clinical hospital. To many of our fellow citizens this term may be a strange one, but if they had studied in Vienna or in the cities of Germany, they would know that there the hospital is always a corporate part of the medical school.

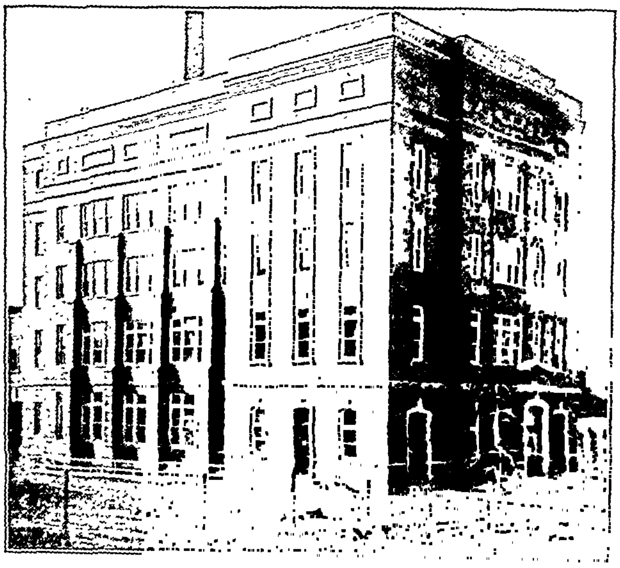
Fig. 6.—Pathologic institute.

Let us hope that the chief executives and those having charge of hospitals in every other large city in this country may be imbued with the same progressive ideas.

Granting then that the large municipal hospitals are the best suited for medical teaching, it becomes our duty to endeavor to raise their medical standard, their organization and administration to the very highest point of efficiency. I am strongly in favor of municipal hospitals, because there is no valid reason why the support of the sick poor should fall on the shoulders of the comparatively small number of charitable citizens, which is the case when hospitals are supported by voluntary contributions. *The municipal hospitals should be made equal to the best, and their maintenance being paid out of the general taxes will compel that large percentage of the population who are abundantly able to contribute, but never do, to bear their just part of the burden.*

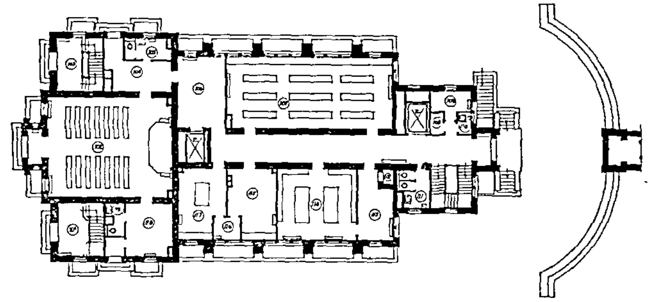

Fig. 7.—First-floor plan, pathologic building, New General Hospital, Cincinnati; schedule of rooms; 101, stair hall; 102, chapel; 103, stair hall; 104, lobby; 105, minister's robing-room; 106, undertaker's room; 107, laboratory; 108, closet; 110, slop-sink; 111, water-closet; 112, vault; 113, custodian's office; 114, reading-room; 115, chemical laboratory; 116, spectroscope; 118; family retiring-room; 119, water-closet.

I know that the argument will be advanced that politics in city affairs will prevent the carrying out of the high ideals mentioned above. To my mind that depends on the leaders of the profession themselves. If in every city a few of them will stand together and give freely of their time and energy to educate the people as to what is right, and to the best interests of the sick and the city in general, I doubt if there is any community in which the majority of the people will not rally to their support and help to bring about the desired results. True, it takes time and perseverance, but I am firmly convinced that the old adage that "truth is mighty and will prevail" will also be proved correct under these conditions.

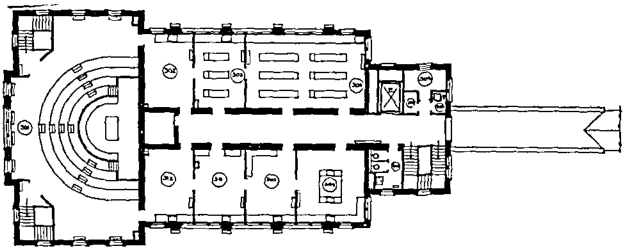

Fig. 8.—Third-floor plan, pathologic building; schedule of rooms; 301, amphitheater; 302, 303, 304, 309, 310, 311, 312, laboratories; 305, closet; 307, slop-sink; 308, water-closet.

With the raising of the standard of medical teaching and the hospitals becoming the clinical departments of universities, there must also come, in the interest of hospital efficiency and teaching, the abolition of the rotating service of the chiefs of departments. That this will encounter some opposition there can be no doubt, but it is bound to come, and judging by the number of institutions in which this change has been effected, its adoption in the near future by the leading municipal hospitals appears reasonably certain.

The paying of salaries to the heads of the departments of surgery, medicine, obstetrics and gynecology appears to be the best solution. I realize that at present few, if any, public institutions can adopt this standard; but so long as the fundamental branches are taught by first-class full-time men, the clinical side will, till the higher ideal can be accomplished, maintain its standard for efficiency under the guidance of carefully selected practicing physicians who serve without compensation.

In considering how best to regulate the services with payment of salaries to some or all of the heads of departments, we take cognizance of three methods:

1. The heads of all clinical departments shall be paid a salary for devoting a specified amount of time each day to the hospital, but are permitted to carry on their private practice, as is generally done in Germany, certainly with most satisfactory results.

2. The heads of the departments of medicine, surgery, gynecology and obstetrics shall be paid a salary, but are enjoined from carrying on private practice, excepting consultations — the latter not limited to the hospital in which the heads of above-named departments are serving — and for which the physicians retain the fees.

3. The heads of the departments of medicine, surgery, gynecology and obstetrics shall be paid a salary and their consultations limited to cases brought to their own hospital, with the fees for such consultations going to the hospital fund, instead of to the physician.

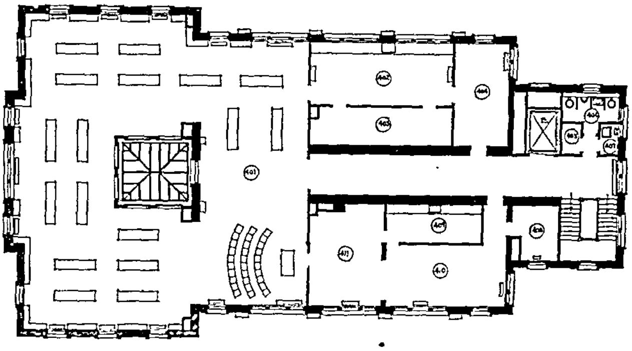

Fig. 9.—Fourth-floor plan, pathologic building; schedule of rooms: 401, museum; 402, curator's work-room; 403, store-room; 404, curator's office; 405, closet; 406, water-closet; 407, slop-sink; 408, negative store-room; 409, dark room; 410, photographic laboratory; 411, photomicrography.

My personal views are unhestitatingly in favor of the first proposition.

The wonderful work so successfully performed of investigating, classifying and standardizing the medical schools of this country, as carried out by the Council on Medical Education and the Carnegie Foundation, as set forth in Abraham Flexner's classic reports, is rapidly eliminating the undesirable, low-standard medical

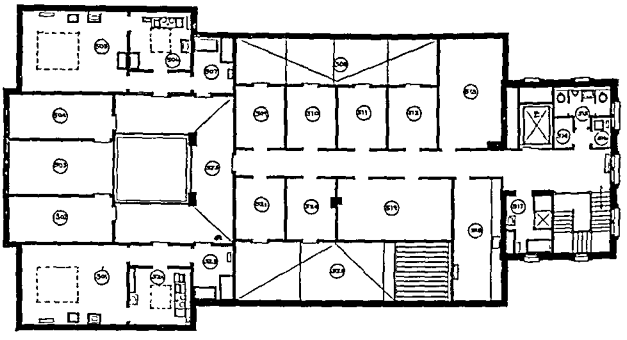

Fig. 10.—Fifth-floor plan, pathologic building; schedule of rooms: 501, surgical operating-room; 502, 504, 509, 510, 511, 512, 520, 521, animal pens; 503, 508, 522, open yards for animals; 505, pathologic-bacteriologic operating-room; 506, preparation room; 507, 517, 523, bath-rooms; 513, fan room; 514, closet; 515, water-closet; 516, slop-sink; 518, feed room; 519, store-room; 524, sterilizing-room; 525, open court.

schools. May the work of standardizing the hospitals, which is now under way, be equally successful at an early date. It is perfectly evident that the action already taken by the states of Minnesota, Pennsylvania and others, and the feeling both among leading physicians and among laymen, that every man who is going to practice medicine should have at least one year's service in a hospital, will soon be adopted in many other states. As Dr. Herrick has so aptly said:

> If he (the student) does not get his training in this safeguarded manner before he is a licensed practitioner, he is forced to get it in his private practice on your child or on mine with no counseling voice of senior to keep him from sins of omission and commission. How many sad, even fatal blunders, are made through lack of proper practical training no one can tell—it is best not to tell!

I am strongly in favor of the hospital year, and believe that the time has arrived for united action on our part, directed toward having laws passed requiring the hospital year before a license is granted to practice medicine.

If the hospital work is compulsory, then the student has a right to know that the institution he enters is up to the standard requirements. The serving for pay during the hospital year should be prohibited; only poorly conducted institutions will pay, and the small temporary reward can in no way compensate for the loss to the intern of efficient hospital service.

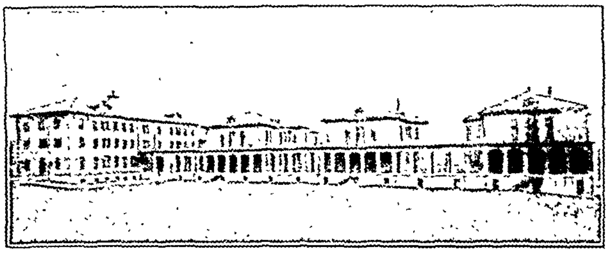

Fig. 11.—Contagious group.

As it was realized several years ago that the hospital year was bound to come, the accommodations for interns in the Cincinnati New General Hospital were planned spacious enough to meet all requirements. According to the comprehensive report of the Council on Medical Education to the House of Delegates, June 16, 1913, on "The Hospital Intern Year," there are in this country about 4,500 medical graduates each year.

There are 924 hospitals having 100 or more beds, and 1,500 having from twenty-five to 100 beds, a total of 2,424 hospitals.

Of these, 852 hospitals have 3,000 interns, while 1,572 hospitals have no interns, and as there are only 1,500 medical graduates left for whom to provide internships, or less than one intern to every hospital not supplied, there seems no valid reason why there should be any difficulty in providing every candidate with a hospital internship.

Many colleges report that some of their graduates do not desire internships, either because they are going directly into practice or "they were married." One reason for this is no doubt to be found in the fact that, owing to faulty planning, or no planning at all, of the premedical education, the average age of the students graduating in medicine in this country, including a hospital year, is about 28 years, while in England and Germany it is about 25 years.

It therefore seems plain, as so forcibly set forth by Dr. Bevan and others, that the premedical education should be so planned as to graduate our students at the age of 25 instead of 28. This would save three years at that period of life when the fire and ambition of youth with the power of assimilation and adaptability are at their best and count for so much when the graduate is beginning the struggle for an honorable position in his chosen vocation.

(For discussion, see page 877)

REGISTRATION UNDER THE CANADA MEDICAL ACT*

R. W. POWELL, M.D.
Registrar of the Medical Council of Canada
OTTAWA, ONT.

Allow me in the first place to express my appreciation of the compliment extended to me in giving me this opportunity of addressing this distinguished gathering of educationalists. I fully realize that it is the office I hold that has singled me out for this distinction, but nevertheless, I feel that you will pardon an humble pride when I tell you that this scheme of "Dominion Registration" has for many years been very dear to my heart and that in season and out of season I have forwarded the measure to the limit of my capacity, and now when I find that within eighteen months of its fruition I am here in the flesh to amplify its measures to my colleagues of this great republic, I feel a sense of gratification not measurable in words.

Since the birth of the Dominion of Canada in 1867 the profession of medicine has never once lost sight of the unfortunate position it was placed in by reason of certain clauses of the British North America act, which placed matters affecting education under the control of the provinces. It is fairly clear that such was not the absolute intention of the framers of that act; but rather that what was intended to be included was matters of ordinary or common public education, and from that day to this the provinces have held out stoutly for what they honestly believed were their rights under the constitution.

With the birth of the Dominion came the birth of the Canada Medical Association, and at its first session in Quebec in 1867 under the presidency of Dr. Tupper, now the veteran Sir Charles Tupper, the question was introduced and discussed and a bill was actually framed about two years later to test the question in the Canadian parliament. So many obstacles appeared to be in the way that the scheme was dropped so far as the active political leaders were concerned. When I mention that Sir Charles Tupper, a prominent member of our profession in his day and a prominent and leading politician as well, felt that the scheme for a federal act was out of the question, you will realize that serious difficulties must have been on the horizon. Sir Charles was not a man to be daunted by trifles and he was always the embodiment of loyalty to our profession.

I may add that years afterward (in the early eighties) I personally went into the matter with him, only to be told that the one and only way to accomplish our desires was by first securing an amendment to the

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* Read at the Tenth Annual Conference of the Council on Medical Education, Chicago, Feb. 24, 1914.

British North America act in the imperial parliament at Westminster — many of my hearers must know what a herculean proposition this would entail.

Our profession, always hopeful and never pessimistic, kept on bringing the question to the notice of the general body of practitioners as represented by the Canada Medical Association. From the time I joined the association in 1879 the point has never once been lost sight of, and it came about that the great mass of practitioners, constantly increasing in numbers and influence, became gradually permeated with a desire for some general scheme that might be called an interprovincial reciprocity, or roughly, a breaking down of imaginary barriers so far as active practice was concerned. Committees were formed and discussions took place annually, but all to no purpose. It would appear that we were seeking the solution of an impossible situation.

The growth of the Dominion, the addition of new provinces, the establishment of new borders, all tended to tighten the rein, and the barriers became strengthened rather than weakened.

Equalization of standards and the creation of examining boards with corresponding similarity of ideals must be the preceding elements to interprovincial reciprocity. Then again, certain universities had acquired charter rights from the crown extending to all faculties, and this became a bar not easy to surmount in some quarters.

I must now digress for a moment to say that at a most opportune and auspicious moment a patriot and a prophet arose in our country, and to him was given a roving commission by the Canada Medical Association to inaugurate a scheme for the establishment of a medical council for Canada. I refer, of course, to Dr. T. G. Roddick of Montreal, late dean of the faculty of medicine of McGill. To say that Dr. Roddick threw his whole soul into this work would but feebly express my thoughts and his untiring services. He threw his time and his money as well as his energy into it and in 1896 actually sought and obtained a seat in parliament in order to be in a still stronger position to forward his measure. Could human devotion and enterprise go further than this? It necessitated hard work, much patience and diligence as well as a refined diplomacy of a high order. Unbounded pluck and perseverance came to his assistance. He traveled the length and breadth of Canada on three separate occasions, met all the provincial councils, sympathized with them, argued with them, persuaded them to rise above provincialism, and while all this was going on he never lost an opportunity of bringing his scheme to the notice of the profession at large. It is gratifying to us all to know that his work has been appreciated and that on its consummation in November, 1912, he was unanimously elected the first president of the Medical Council of Canada by acclamation.

I most sincerely wish that he could have been here to-day to enter into the spirit of this meeting and to take my place on this platform by addressing you, but it was not possible. He begs me, however, to assure you that he is thinking of this meeting to-day and that while he can only send his benediction, his hopes and wishes are for the highest fruition of your endeavors and that they will be crowned with a result that will stand for what is highest and best.

The history of the creation of a Canada medical act can be told now without trespassing too long on your patience. I may say that the pivotal points of the act were few. Certain great principles had to be kept in mind, and possibly if I take these up seriatim I can the better elucidate what has happened.

I have told you that the provinces of our dominion had certain charter rights specifically granted to them, and it was provided that as new provinces were carved out and given a constitution by the Dominion government at Ottawa these charter rights were to be automatically extended. One of these was education, and so it came about that each province has from time to time passed certain laws regarding the admission of men to the license to practice medicine. Certain bodies outside what we know as the regular profession also secured rights for their adherents.

It is evident now that the parliament of Canada could not pass laws that would contravene the provincial rights, and I may say that on many occasions the framers of the Canada medical act were confronted with this awful bugbear. It was thought by some that beneath the wording of the act there must be some sinister influence lurking that would in some way undermine their privileges. It was not really so, because the Canada medical act to-day does not take away a single right of the provinces, albeit some years were spent in establishing the argument.

The first point then is that the federal act constitutes a body known as the Medical Council of Canada, giving it powers to create an examining board and to establish a medical register for Canada. The next point was that the standard to be fixed by the council, the passing of which would entitle the candidate to be enrolled on the register, was at all times to be at least as high as that obtaining in any province of the Dominion. If the council allows the standard to fall below a certain plane and exception is thus taken to the act by an aggrieved province, there is provision in the act for a tribunal before which the matter is to be heard and settled.

The next point was the composition of the council. This really gave rise to much controversy owing to the unequal distribution of medical men in the various provinces and to the fact that if so-called justice was to be done as regards representation by population, the council would be an unwieldy, cumbersome body with its efficiency proportionately reduced. It was kept in mind that in this great country where I am speaking to-night the small state of Rhode Island has representation in the Senate equal to her sister states. I submit this subject to correction.

To leave out pages of discussion and argument, a basis was finally arrived at as follows: Each province of the Dominion through its medical council is entitled to send two representatives to the council, and they are to be chosen or elected in such manner as the particular provincial medical council may by by-law enact.

Then, each university having a teaching faculty of medicine, or medical school having university affiliations for granting degrees in medicine is entitled to one representative.

The homeopathic body, which has certain rights in all the provinces, is considered as a whole, and they elect three representatives from their adherents in Canada.

In order to cement this body and give the government of Canada a voice in the conduct of its affairs and to make it more or less an advisory body if need be, to the Canadian government, the Governor General in

Council (which is the Dominion cabinet) has the right to send three representatives. On this point it is provided further that as certain of our western provinces have not as yet university representation, and until they do have it by virtue of the creation of faculties having degree-conferring powers in medicine and surgery, two of the three government appointees must be selected from one or other of the said western provinces to distribute as equably as may be the total body of the council over the entire Dominion.

Another point was that the Medical Council of Canada was to have nothing to do with matriculation or preliminary education. The framers of the act immediately conceded that this was eminently fair and in the spirit of the British North America act.

Another important point which followed naturally from the foregoing is that holders of foreign diplomas must present similar certificates to those required of Canadian graduates.

This was necessary in order that the provincial authorities who must sign the certificates of those applying to come up for the Medical Council examinations, and who are not as yet licensed practitioners of any province of Canada, can satisfy themselves on all points as to whether the candidate has fulfilled all the requirements, including preliminary education and matriculation and the course of study subsequently.

A difficult question arose in considering the status of those who were already licensed in some province when the act came into force. It was felt by certain provinces that it would possibly be to their detriment if the whole body could receive Dominion registration by paying the fee when the act came into force and so receive registration in any province if they so desired. It was decided that a fixed time should be settled for a man to have been licensed before he could thus take advantage of the act. It was pointed out that if a man had been six or seven years practicing in a given locality, he would be more likely to have formed alliances and be more or less rooted in his habitat and that growing provinces would therefore not be liable to a stampede. After prolonged discussion and negotiation this period was fixed at ten years. Therefore, when the act came into force those who had been licensed prior to the particular date and had been ten years so licensed could apply for and obtain Dominion registration by paying the fee and complying with certain ordinary regulations. This so-called ten-year clause goes on for a time and applies to all who were licensed to practice prior to Nov. 7, 1912. Thus, if a man was licensed in 1904 he can obtain Dominion registration under the clause when ten years have expired from the date of his registration, namely, 1914, and so on.

The result of this will be that the ten-year clause will be taken advantage of more largely in the first few years of its operation than later, and after ten years have elapsed there will be only a few men seeking registration by this means, because the natural law is always operating and cannot be legislated away, namely, that we are growing older.

I now come to my final paragraph and about this there was much discussion and argument: At what date was the act to come into force? Leaving aside much detail of interesting argument, it was finally settled in the act that it was not to become operative, but was more in the shape of a permissive bill, till all the provincial legislatures had legislated in effect that they agreed to its provisions and had so amended the medical act of the province that it provided that if A. B. presented himself to the registrar of the province holding a certificate that he is enrolled on the medical register of Canada, he is entitled to be registered on the register of the province as a licensed practitioner by complying with the ordinary regulations in that behalf, such as paying the customary required fee, etc.

ADENOMYOMA OF THE RECTOVAGINAL SEPTUM *

THOMAS S. CULLEN, M.D.
BALTIMORE

At the meeting of the Canadian Medical Association in June, 1913, I incidentally referred to two cases of this character that had recently come under my care.[1]

This group of cases has in large measure escaped the attention of the surgeon. They are, however, of much interest not only to the pathologist but also to the operator.

Several months ago Dr. D. S. D. Jessup of New York, sent me slides from two pelvic tumors. In each case the tumor had been attached to the cervix posteriorly and had grown into the rectal wall. In each case the growth was so firmly fixed that, while the surgeon was doing a complete abdominal hysterectomy, he was compelled to remove at the same time a piece of the anterior rectal wall, as it was absolutely impossible to separate the uterus from the rectum. The slides that I examined showed non-striped muscle with islands of typical uterine mucosa scattered throughout them. The muscular tissue under the microscope was seen to be intimately blended with the rectal wall, but the rectal mucosa was perfectly normal. The histologic pictures in these two cases were identical with those found in adenomyoma of the uterus.[2] An account of the two cases from which the specimens were taken will be published shortly by the surgeon who operated on the patients.

Within forty-eight hours after I sent my report to Dr. Jessup, the February number of the *Proceedings* of the Royal Society reached me, and in it was a similar case reported in full by Cuthbert Lockyer of London. His description was most lucid and the illustrations left absolutely no doubt that the case was one of adenomyoma of the rectovaginal septum.

LOCKYER'S CASES

CASE 1.—*Teat-like projection in the vaginal fornix.*

Cuthbert Lockyer[3] at the meeting of the obstetric and gynecologic section of the Royal Society of Medicine, Jan. 2, 1913, before reporting a very interesting case of adenomyoma in the recto-uterin and rectovaginal septum, briefly referred to a case that he had previously seen in which there was a teat-like projection in the right vaginal fornix. This projection was covered over with vaginal mucosa. There was no ulceration and the growth lay close to the cervix on the right side and was long enough to be palpable before the examining finger reached the vaginal cervix. In this case there was no projection into the rectum and no operation had been performed.

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* From the Gynecological and Pathological departments of the Johns Hopkins Hospital and University.

* Read before the Southern Surgical and Gynecological Society, Atlanta, Ga., Dec. 16, 1913.

1. Cullen, Thomas S.: Address in Gynecology, Canadian Med. Assn. Jour., August, 1913.

2. Cullen, Thomas S.: Adenomyoma of the Uterus, Philadelphia, W. B. Saunders Company, 1908.

3. Lockyer, Cuthbert: Proc. Roy. Soc. Med., 1913, vi, No. 4.

Case 2.—*Adenomyoma of the recto-uterine and rectovaginal septa.*

The patient, aged 35, was married but sterile. She complained of vaginal hemorrhage and pain. The periods had always been regular, but for twelve months the loss had been excessive, particularly for the last three months. There was great pain in the rectum, and defecation had become very difficult. The pain had been very severe for the past three months and the patient felt as if "something prevented the bowels from moving." The pain was always worse at night. For several weeks the patient had been bedridden. The hemorrhage for a few weeks previous to her entering the hospital had been practically continuous, but there had never been any bleeding from the bowel.

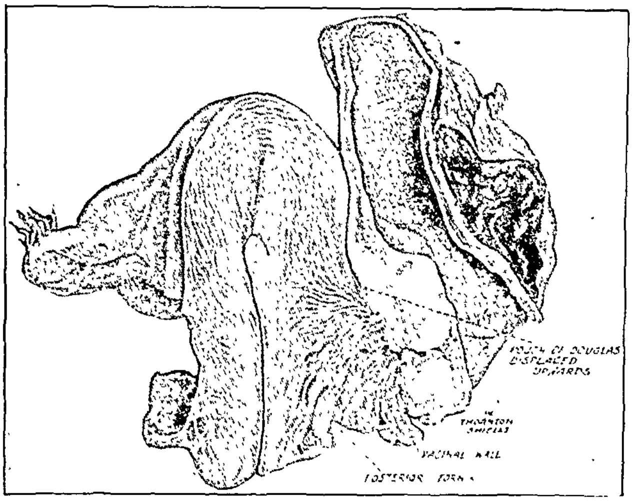

Fig. 1.—Adenomyoma of the rectovaginal septum. A longitudinal section of the uterus and rectum. The posterior wall of the cervix is occupied by a diffuse fibroid growth, which near the cervical canal contains irregular cavities. Posteriorly the growth is intimately blended with a tumor which has implicated the anterior rectal wall and markedly encroached on the lumen of the bowel. The rectal mucosa is still intact. For the histologic picture see Figure 2. (Copied from Cuthbert Lockyer.)

On vaginal examination a curious hard mass was felt in the posterior vaginal fornix; it was definitely fixed to the supravaginal cervix and adherent to the pelvic floor. The mass was found to project anteriorly into the lumen of the rectum, but the overlying mucous membrane was intact. No definite diagnosis was made.

It was noted that, although the vaginal cervix was normal, the upper part of the posterior vaginal wall for a space of 1½ square inches was puckered and presented bluish-like varicosities.

Operation.—When the abdomen was opened the appendages were found to be normal and the uterus small. The rectum and uterus had become fused together below the peritoneal reflection so that the two structures could only be moved *en masse* from side to side (Fig. 1). As it was impossible to remove either viscus apart from the other Lockyer proceeded to take the uterus and rectum out together. For this purpose he began as for a Wertheim panhysterectomy by dissecting out the ureters. The left ureter was very intimately adherent to the side of the rectum, to the growth and to the vagina. The right ureter was not adherent. After displacing the ureters and ligating the uterine vessels he carried the dissection anteriorly down as far as possible. The vagina was opened in front and the uterus was now freed from all its connections except where it was adherent to the rectum and to the undivided posterior vaginal wall. The rectum was next divided between clamps and the proximal end wrapped up and held aside in the upper angle of the wound. The edges of the vagina were ligated with several interrupted sutures. The edges of the rectum were invaginated and then oversewn. The cellular tissues were tied off and the peritoneum of the pelvis was closed. A small vaginal drain was employed.

The sigmoid or upper free end of the bowel was brought out through a fresh lateral opening in the left iliac region and the central abdominal wound closed. Two drainage-tubes, however, were inserted down to the closed peritoneal level. The convalescence was disturbed, but the abdominal wound never broke down and the patient at the time of the meeting was sitting up, although still in the hospital.

Lockyer says that microscopically the growth had the structure of an adenomyoma, being made up of dense fibrous and muscular tissue in which were sparsely scattered simple gland tubules surrounded by very cellular tissue similar to that seen around the tubules or follicles of adenomyoma of the uterus (Fig. 2). Histologically, he says, the growth was comparatively benign, but with the naked eye it could be seen that the cervix as well as the anterior wall of the vagina had been definitely invaded by it. There were large hemorrhagic areas which ran down from the center of the growth to the vaginal mucous membrane. The clinical observation that the mucosa of the bowel was intact proved to be correct, the only surface lesion being the puckering of the posterior vaginal wall.

Lockyer suggested that this tissue had developed from remains of the wolffian duct. In discussing the case he said that had he known that the growth was not malignant he would have considered removing a portion of the rectum and closing in the opening, thus avoiding the necessity of making a permanent colostomy; but he drew attention to the fact that the rectal wall over a large area was firmly fixed and that in all probability it would have been necessary in this case to do a resection.

Two excellent illustrations accompany the communication. The first (Fig 1) shows a longitudinal section of the uterus and the rectum with the growth lying between. The posterior wall of the uterus near the cervix is much thickened and intimately blended with the growth. The rectal mucosa, although puckered, is everywhere intact.

Figure 2 shows a section through the growth and rectal mucosa. The rectal mucous membrane is intact. The underlying growth is in large measure muscular in character. The gland spaces are large and small. Some of the glands lie in direct contact with the muscle, others are separated from it by a definite stroma.

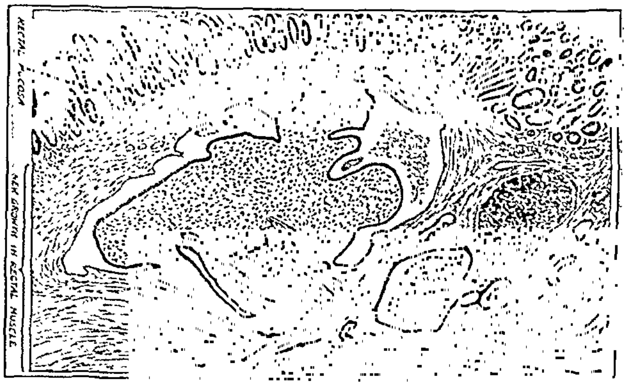

Fig. 2.—Adenomyoma of the rectovaginal septum. For the gross appearance of the tumor see Figure 1. The section includes the rectal mucosa and a portion of the underlying tumor. The rectal mucosa is intact and normal. The tumor lying beneath it consists of non-striated muscle with glands scattered throughout it. Some of these glands lie in direct contact with the muscle and a few of them are dilated. The glandular area in the center of the field has a definite stroma, which is sharply differentiated from the surrounding muscle. It is the characteristic stroma of the uterine mucosa. The tumor is so intimately blended with the rectal wall that no point of cleavage is possible. Consequently the operator would be forced to remove a portion of the rectum, if he attempted a complete excision of the tumor. (Copied from Cuthbert Lockyer.)

There is absolutely no doubt that Lockyer was dealing with a typical adenomyoma. Its constituent elements were similar to those of adenomyoma of the uterus.

In the discussion of Dr. Lockyer's paper Dr. Macnaughton-Jones briefly referred to a patient aged 66, a nullipara, who had a hard mass occupying the rectovaginal septum. This included the posterior aspect of the vagina with its upper two-thirds and had encroached laterally for some distance. No microscopic examination of this growth had been made, and consequently its exact character could not be determined, although the patient six months after a curettage was in good health and not suffering to any appreciable extent.

Mr. Clifford White in the same discussion said that he had observed two patients suffering from growths in the rectovaginal septum. Both had been admitted to the University College Hospital during the year. Clinically in both cases the tumors were malignant, but sections showed apparently simple adenomatous tissue. There were glands lined with a single layer of epithelium separated from the connective tissue by a definite basement-membrane. No proliferation of the epithelium was present. The connective tissue was fibrous and muscular and contained much lymphoid tissue. The squamous vaginal epithelium was thickened but not epitheliomatous. In neither case was an operation undertaken.

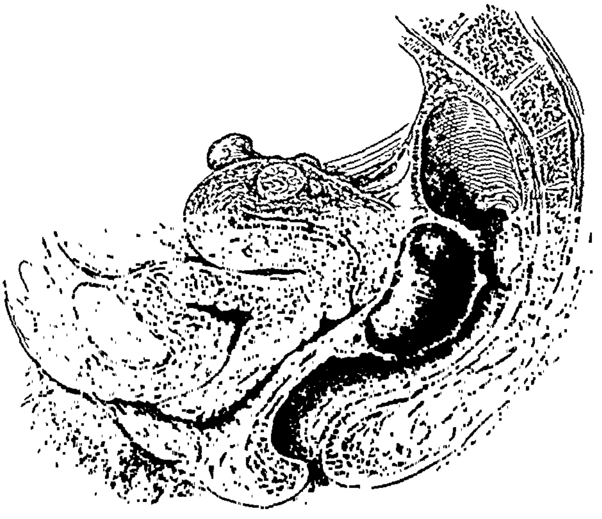

Fig. 3.—Adenomyoma of the rectovaginal septum. Gyn.-Path. No. 16079. A diagrammatic representation of the condition found at operation. The uterus contains several small subperitoneal and interstitial myomas. The cervix posteriorly is adherent to the rectum. Occupying the rectovaginal septum is an oval myomatous nodule, which projects into and narrows the lumen of the bowel. The overlying rectal mucosa is intact, but was the seat of several small rectal polypi. At operation the ureters were isolated and the uterus was then removed. The myoma in the rectovaginal septum, although intimately adherent to one ureter, was removed without injury to the ureter or to the rectum. For the histologic picture of the nodule in the rectovaginal septum see Fig. 4.

Mr. Herbert Spencer, referring to the cases mentioned by Mr. Clifford White, said that in the first case the growth occupied the rectovaginal septum below the posterior lip of the cervix. The tissues around the rectum were infiltrated up to the pelvic wall and the exudate was nodular. He said that microscopic examination showed the growth to be an adenomyoma. As the patient was in good health he proposed to keep her under observation for the present.

My two cases, while somewhat different from those of Jessup and Lockyer, definitely belong to the same group. Case 1 shows a very early stage, whereas Case 2 clearly shows the late stage of the disease.

AUTHOR'S CASES

Case 1.—*Myomas of the uterus, adenomyoma between the cervix and rectum and associated with rectal adhesions.*

Mrs. G. P. E., seen in consultation with Dr. Samuel T. Earle, March 17, 1911, had several small polypi in the rectum. The uterus lay back on the bowel and was apparently adherent.

Operation.—March 22, Dr. Earle burned away five or six rectal polypi which were situated directly behind the cervix. Microscopic examination of the growths showed that they had been undergoing definite inflammatory changes, as evidenced by the quantities of polymorphonuclear leukocytes on their surface and by the fact that the underlying stroma contained great quantities of small round cells.

After Dr. Earle had removed the polypi, I opened the abdomen. The rectum was adherent to the posterior surface of the uterus low down. On the left side was a corpus-luteum cyst. This had evidently ruptured at some previous time, as the surrounding tissues were stained dark brown. I did a complete hysterectomy, removing the uterus and appendages, and then shelled out a myoma, 1 cm. in diameter, from the left side of the pelvic floor and another, about 4 cm. in diameter, with a secondary nodule, 1 cm. in diameter, lying on its surface. This combined nodule was situated between the rectum and vagina on the left (*Fig.* 3).

Oct. 12, 1911, the patient returned to me with signs of definite renal trouble. The roentgenogram showed a stone in the pelvis of each kidney. As the left kidney had apparently given more trouble than the right I removed the stone from the pelvis of that kidney. The patient improved markedly, but from time to time she experienced some pain in the right renal region.

Nov. 19, 1913, I removed a stone from the pelvis of the right kidney. The patient at present is in excellent condition.

Pathologic Report No. 16079: The uterus itself is only slightly enlarged. Scattered over the surface of the organ are several small fibroids. On microscopic examination the endometrium shows a definite endometritis.

The larger nodule lying between the cervix and rectum is 4 by 3 by 2 cm. and the smaller one 1 cm. in diameter. The larger nodule on histologic examination consists in the main of typical myomatous tissue, but at one point in a cleft (Fig. 4) are islands of typical uterine mucosa and at another point is a miniature uterine cavity. One of the smaller nodules contains one or two gland-like spaces.

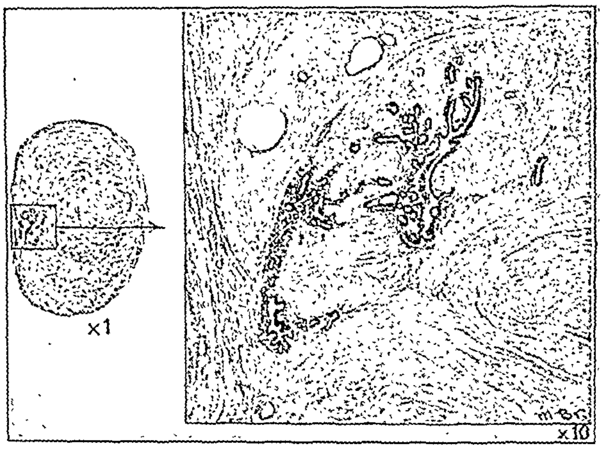

Fig. 4.—Adenomyoma of the rectovaginal septum. Gyn.-Path. No. 16079. For the gross appearances see Figure 3. The point from which the drawing was made is indicated in the small sketch on the left. The greater portion of the tumor consisted of myomatous tissue. A glance at the islands of mucosa is sufficient to establish the fact that they consist of typical uterine mucosa. The glands resemble ordinary uterine glands and are surrounded by the characteristic stroma. The picture is identical with that noted in adenomyoma of the uterus.

From the history it will be noted that in this case the cervix was adherent to the rectum. We have here a connecting link between the ordinary adenomyoma of the uterus and an adenomyoma involving the rectum. It is the only case that I have ever seen showing just this stage.

Case 2.—*Adenomyoma in the left broad ligament intimately blended with the rectum.*

Mrs. G. S., referred to me by Dr. E. C. Taliaferro of Norfolk, Va., was admitted to the Johns Hopkins Hospital June

4, 1913. This patient was 37 years of age and two years before had been operated on in San Francisco, a myomatous uterus and enlarged ovaries being removed. At that time it was necessary to remove a small portion of the rectum also on account of dense adhesions. She had a stormy convalescence and shortly after the operation developed intestinal obstruction.

After leaving the hospital she had had a great deal of pain in the lower abdomen and for months had had almost continuous bleeding from the cervix. On admission I found a thickening behind the cervix and induration in both broad ligaments. Although the patient was much weakened from the continuous loss of blood we felt that something must be done. The cervix was dilated and on curetting we brought away what on microscopic examination proved to be perfectly normal uterine mucosa. The supravaginal hysterectomy had evidently been a high one.

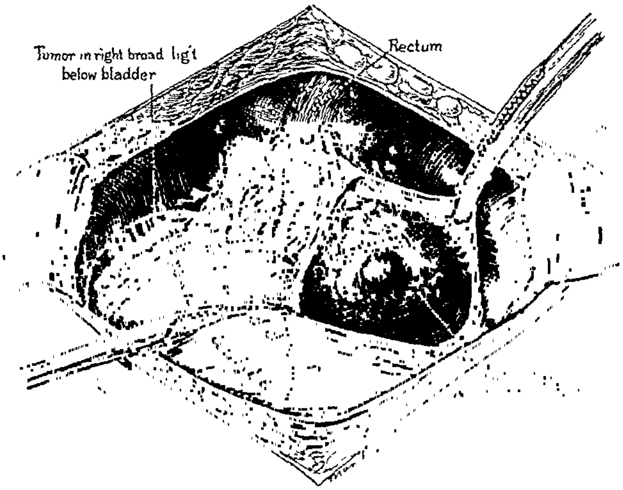

Fig. 5.—Adenomyoma of the broad ligament densely adherent to the rectum. A diagrammatic representation of the appearance of the pelvis at operation. As noted in the history, the uterus and appendages had been removed several years before. The bladder was densely adherent to the rectum. When the left broad ligament was opened up, a cystic mass was encountered, which was adherent to the pelvic wall and blended with the rectum. Its walls consisted of muscle and in its center was a cavity about 2.5 cm. in diameter, lined with a brownish-tinged membrane. The cavity contained chocolate-colored blood. Fig. 6 gives the histologic picture of the walls of this tumor. The right broad ligament also contained a firm mass probably similar in origin, but the condition of the patient did not warrant its exploration.

The right broad ligament was indurated and boardlike and on the left side there was also thickening.

An attempt was made to build the patient up, but she continued to lose a great deal of blood and showed absolutely no improvement. A few days later we felt that it was imperative to explore the abdomen. When the operation was begun the pulse was 45. We found the rectum densely adherent to the bladder and the left broad ligament was filled with a somewhat cystic mass. Those assisting at the operation thought we were dealing with a malignant growth, which had spread into both broad ligaments. In order to determine definitely I cut the left round ligament, separated the folds of the broad ligament, and found we were dealing with a cystic mass 6 cm. in diameter (Fig. 5). This was gradually shelled out from its attachment to the pelvic wall, but by the time this had been accomplished the patient's pulse had become almost imperceptible, the rate being from 180 to 190, although she had lost practically no blood. We removed the greater part of the growth, but left a portion still attached to the rectum and did not dare explore the right broad ligament. A drain was introduced into the pelvis and brought out through the lower angle of the incision. When the cystic mass that was attached to the rectum was cut across we found that it contained one large irregular cavity about 2.5 cm. in diameter. This contained chocolate-colored fluid and was lined with a rather smooth-looking membrane which had a brownish tinge. The outer coats of the tumor looked like ordinary muscle.

On microscopic examination it was found that the wall of the blood-stained cyst was lined with one layer of cylindrical epithelium and that this rested on a definite stroma consisting of cells with oval vesicular nuclei. The more solid portions of the growth were made up of non-striped muscle fibers arranged in whorls and of quantities of uterine glands embedded in their characteristic stroma (Fig. 6). In some places only two or three glands with the surrounding stroma were visible, but at other points miniature uterine cavities were found.

In this case we were dealing with an adenomyoma, which had become densely adherent to the rectum. It was hoped that we might at a later date explore the right broad ligament, remove the cervix and then a portion of the rectum with which the growth was intimately blended. The patient, however, gradually became weaker and died, June 19, 1913.

Adenomyoma of the uterus is now a well-recognized pathologic lesion and in many cases can be diagnosed clinically. That it is not rare is evident from the fact that I was able to report over seventy cases from the gynecologic clinic of the Johns Hopkins Hospital. It was clearly shown that in the majority of the cases the glands of the adenomyoma came from the uterine mucosa. It was further pointed out that portions of the growth might be carried into the uterine cavity, forming submucous adenomyomas, and that in other cases portions of the adenomyoma were carried outward, forming subperitoneal adenomyomas, and that these subperitoneal growths, when released from the compressing influence of the uterine wall, sometimes become cystic, the cyst fluid being chocolate-colored—an accumulation of old menstrual blood. It was also demonstrated that an adenomyomatous uterus tends to become adherent to the surrounding structures.

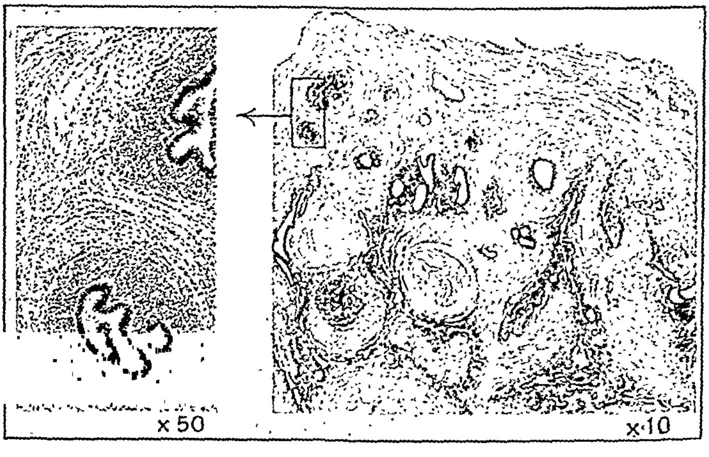

Fig. 6.—Adenomyoma in the left broad ligament. This section is from the tumor occupying the left broad ligament in Figure 5. The tumor consists of myomatus tissue everywhere traversed by typical uterine mucosa. The glands are surrounded by the characteristic stroma of the mucosa, which is sharply differentiated from the surrounding muscle. Some are dilated. A few of the outlying ones lie in direct contact with the muscle. The small area indicated by the arrow has been enlarged. Here we see that the glands are lined with one layer of cylindrical epithelium and that their surrounding stroma stands out in sharp contrast to the muscle.

I have reported elsewhere instances of adenomyoma of the round ligament[4] and tumors of the umbilicus consisting of adenomyomas.[5] All of these tumors, no matter where situated, showed the same clinical reaction, namely, swelling up at the menstrual period.

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[4] Cullen, Thomas S.: Adenomyoma of the Round Ligament, Bull. Johns Hopkins Hosp., 1896, Nos. 62 and 63.

[5] Cullen, Thomas S.: Surgical Diseases of the Umbilicus, The Journal A. M. A., Feb. 11, 1911, p. 391.

In my group of adenomyomas of the uterus were several of cervical origin. If these grow posteriorly, owing to their inherent tendency to become attached, they will spread out into the rectovaginal septum, and become adherent to the rectum; or the peritoneal surface of the cervix may grow fast to the peritoneal surface of the rectum. In either case the rectum becomes fixed to the cervix.

My Case 1 is probably the earliest stage of such a condition. Lying in the pelvic floor were several myomas, the smaller ones consisting of simple myomatous tissue, the largest one measuring 4 by 3 by 2 cm. (Fig. 3) in diameter and containing a well-developed island of uterine mucosa (Fig. 4). It will be noted that even at this early stage the rectum was adherent to the posterior surface of the cervix. It was, however, possible to remove the uterus without injury to the bowel.

In Jessup's two cases the growth was so intimately blended with the rectum that in each it was necessary to remove a piece of the rectum with the uterus.

Lockyer's case represents a still further development of the adenomyoma. Such a wide area of the bowel was adherent that it was necessary to remove a complete segment of the rectum and to make a permanent colostomy.

In my Case 2, when the abdomen was opened, in San Francisco, the operator had found it necessary to remove a piece of the rectal wall with the adherent myomatous uterus. The patient's recovery was slow and complicated by an intestinal obstruction. When I saw the patient several years after the first operation she had had vaginal bleeding for months and was almost exsanguinated. When all attempts at building her up had failed, and the loss of blood still continued, as a last resort we did an exploratory operation, with the results recorded above. As noted from the history, the operation was necessarily an incomplete one, and hence it was impossible to tell the exact character of the thickening in the right broad ligament, but it was in all probability also adenomyomatous in character.

These cases are naturally of considerable interest to the surgeon. In the first place these growths, of course, are found only in women, and in the second place, histologically, they are not malignant; that is, they do not give rise to metastases. In the early stages, as shown in my Case 1, the growth may be removed without injury to the rectum. When the growth has invaded the rectum to a limited extent it is necessary to remove only a small portion of the anterior wall of the rectum and the defect can be closed, still leaving a bowel of sufficient caliber. When the rectal involvement is extensive, as in Lockyer's Case 2, resection of that portion of the bowel will, as a rule, be necessary.

The immediate differentiation between carcinoma of the bowel and adenomyomas of the rectovaginal septum is all-important to the surgeon. If the uterus contains myomas, the probability that the pelvic growth is an adenomyoma is strengthened. Further, if the growth appears to be muscular in origin this diagnosis is still more probable; if the growth is cystic, the diagnosis of adenomyoma is almost certain.

Cancer of the rectum starts in the mucous membrane, gradually infiltrates the bowel and then extends to the peritoneum and at a later stage may involve the cervix. Clinically, there is a history of hemorrhage from the bowel. In adenomyoma of the rectovaginal septum, on the other hand, the only rectal symptom is painful defecation, or there are obstructive symptoms. On rectal examination the bowel mucosa may be found puckered but still intact. Thus it is seen that the differential diagnosis is relatively easy.

Adenomyomas of the rectovaginal septum are benign so far as they do not give rise to metastases, and consequently if the entire growth be removed no further trouble need be feared. If portions be left these will continue to grow and will lead to more pelvic adhesions, and finally produce complications that may result in death or permanent invalidism. When cancer of the rectum is present the operation must of necessity be a much more extensive one.

This group of cases still more clearly emphasizes the necessity of a careful microscopic control of all rectal growths, as they might easily pass for rectal carcinomas and the cases be classified as permanent cures of rectal cancer, when the patient in reality never had cancer.

In cases of adenomyoma of the rectovaginal septum the ureters should be carefully isolated and the uterus then removed in its entirety as in the Wertheim operation. As soon as the vagina has been cut across the uterus and rectum are more mobile and can be drawn further up into the wound. The necessary oval or elliptic piece of rectum is now removed with the uterus and the bowel wound closed. The remaining stages of the operation are identical with those of the Wertheim operation and it will be wise to place a delicate protective drain in the pelvis, taking care, however, that it does not come in contact with the suture line in the bowel. The lower end of the drain emerges from the vagina.

When the adenomyoma involves a large part of the lumen of the bowel, it will become necessary to resect a segment of the bowel.

The glands in these growths undoubtedly arise from the uterine mucosa or from remnants of Müller's duct. If they were rectal adenomyomas, the glands would naturally be of the type composing the rectal mucosa.

The report of four cases in the course of a few months seems to indicate that adenomyoma of the rectovaginal septum is not rare; and with the more careful examination of all rectal or perirectal growths I feel confident that in the near future many more such cases will be recorded.

In conclusion I want to thank my friend, Mr. Max Brödel, director of the Department of "Art in Medicine," in the Johns Hopkins Medical School, for the excellent illustrations accompanying this article.

3 *West Preston Street.*

DANGERS ATTENDING INJECTIONS OF THE KIDNEY PELVIS FOR PYELOGRAPHY

J. M. MASON, M.D.
BIRMINGHAM, ALA.

Although pyelography was introduced by Voelcker and Lichtenberg[1] in 1906, its extensive employment in this country has been due, in large measure, to the work and writings of Braasch, of the Mayo clinic, in 1909 and subsequent thereto. Many shadow-casting substances have been tried, but collargol is the one which has been most generally used.

The beautiful results obtained in graphically depicting the shape and size of the kidney pelvis and ureter by means of pyelography, and the ease of its employment in connection with ureteral catheterization, together with its alleged freedom from danger, have led to its general employment as a diagnostic measure in kidney surgery.

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[1] Voelcker and Lichtenberg: München. med. Wchnschr., 1906; Cystographie und Pyelographie, Beitr. z. klin. Chir., Festschrift f. Czerny, 1907.

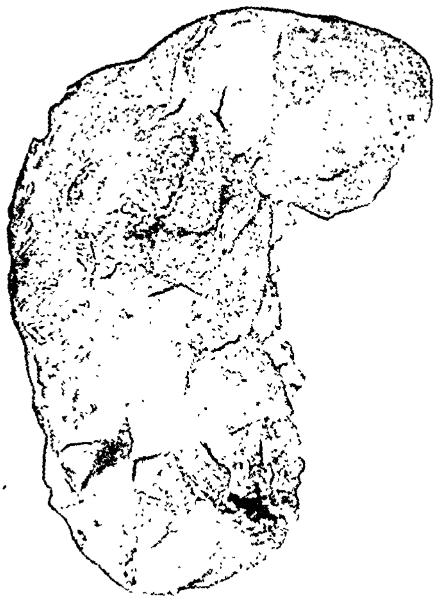

Fig. 1.—Outer surface of kidney in Case 1, showing discolored nodules on surface.

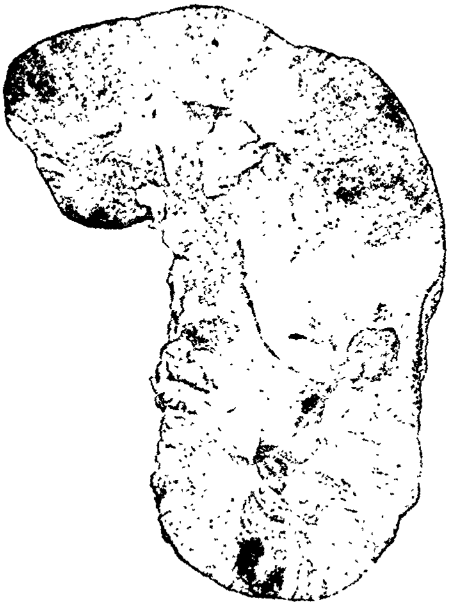

Fig. 2.—Section of kidney in Case 1, showing collargol-stained infarcts.

Prior to 1913, in the reports from the Mayo clinic, I have found no reference to any injurious effects on any of the kidneys subsequently subjected to operation, though Braasch[2] states that he had frequently observed collargol retained in the kidney pelvis into which it had been injected several weeks before, and that its presence does not interfere with wound-healing. During 1913 reports from this clinic would seem to indicate some modification of the views previously entertained as to the innocuousness of injections into the kidney pelvis, and they will be referred to again.

In January, 1913, Thomas,[3] of the Mayo clinic, writes:

> The frequency of overdistention and renal colic resulting from injecting the pelvis of the kidney and ureters with shadow-casting fluids by means of a syringe, suggested to me the idea of using an apparatus with only sufficient force of gravity to cause the flow to reach the kidneys.

With this gravity method, only one colic resulted in more than fifty injections.

REPORTS OF CASES

Case 1.—In February, 1913, there came into my hands a case of hydronephrosis due to ureteral stricture, in which I had occasion to inject the pelvis of the kidney with collargol.

Though I had often made use of pyelography without colic or constitutional disturbance, this patient suffered intensely, and the injection was followed by nausea and vomiting, and by a slight rise of temperature for four days. Twenty-five c.c. of 10 per cent. solution were injected before the slightest pain was experienced.

When this kidney was removed five days later, its surface presented numerous nodular elevations showing black discoloration beneath the capsule. On section, each nodule proved to be the outer surface of an infarcted area, each infarct being deeply stained with collargol, and the different infarcts showing varying degrees of inflammation. No collargol remained in the pelvis.

Case 2.—*A few days later a patient with renal tumor, which proved to be a hypernephroma, came to me, and again collargol was injected.*

Being mindful of the condition of the kidney following the injection in the former case, I was particularly careful with this injection, using 12 c.c. of 10 per cent. solution and stopping on the first appearance of pain, and left the catheter in the ureter until I thought that all the collargol had run out. This injection was practically free from constitutional reaction. On removing the tumor ten days later, I found that this kidney also presented a few of the discolored nodules on its surface, and, on section, the same black-stained infarcted areas seen in the former case. The pelvis contained a quantity of precipitated collargol.

The following report of the microscopic examination of the infiltrated areas of the kidneys is submitted by Dr. E. M. Mason:

"Irrespective of the primary pathologic condition in the kidney, one finds, in all sections, wide-spread deposits of collargol. Throughout the tubules collargol-stained casts and granular deposits are numerous, and many of the malpighian corpuscles show collargol masses within the capsule of Bowman.

"No collargol is found *in the blood-vessels or interstitial* tissue of normal portions of the kidney, but the infarcted areas show large and small collargol masses both in the broken-down tubules and dispersed throughout the necrotic tissue as high up as the surface of the kidney.

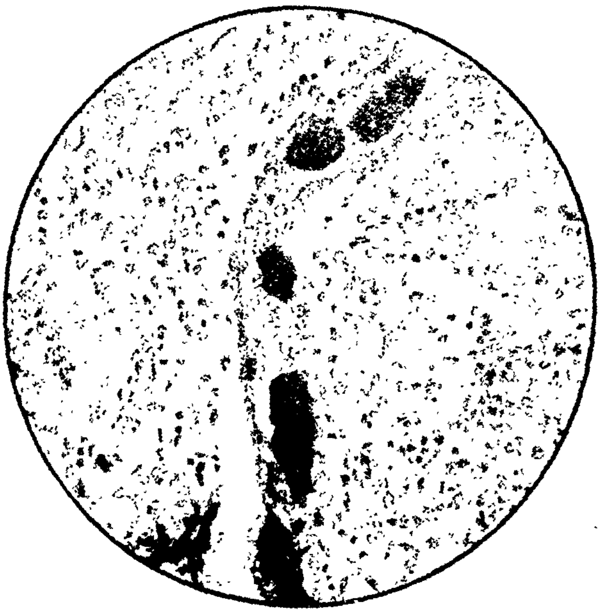

Fig. 3.—Collargol lying in the lumen of a straight tubule. Case 1; × 230.

"No definite evidence of inflammatory reaction can be seen in the collargol-containing tubules outside the necrotic areas, and there is *no cellular infiltration of the adjacent* interstitial tissue.

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[2] Braasch, William F.: Recent Developments in Pyelography, Ann. Surg., 1910, lii, 645.

[3] Thomas, G. J.: An Apparatus for the Injection and Lavage of the Pelves of the Kidneys and Ureters, The Journal A. M. A., Jan. 18, 1913, p. 184.

> "In some areas however, tube-casts, both stained and unstained, are more numerous than one would expect to find as a result of the primary pathologic condition."

Having considered up to this time, along with others, that the pain following injections into the pelvis was due to colic from overdistention, I was surprised at the condition of the kidneys in my cases, and set about investigating the possible injurious effects of injections into the kidney pelvis.

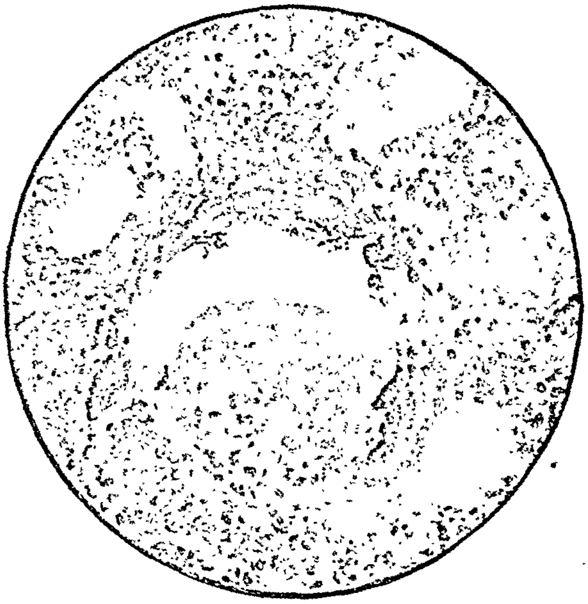

Fig. 4.—Collargol inside the capsule of a glomerulus, Case 1; × 230.

In discussing my cases with Dr. G. S. Graham, professor of pathology in the Graduate School of Medicine of the University of Alabama, I learned that he had some sections of a kidney which he had seen in the laboratory of Prof. F. B. Mallory of Boston, which showed conditions similar to my own. Through his kindness I am able to present illustrations of these sections; and, through the kindness of Professor Mallory, I am able to give a brief description of the microscopic appearance of the kidney.

> "Opposite hilum and toward one end, kidney presents a rounded elevation 4.5 cm. in greatest diameter, dark red about periphery, with irregular, fine, slate-colored areas in central portion. Capsule has been torn away over part of this surface and is ragged and injected. Surface of kidney beneath is smooth. Section shows under this elevation an area roughly parallelogram in shape, extending 32 mm. to the pelvis. Outer end is 25 mm. wide and inner is 22 mm. wide. This area consists roughly of three zones of about equal width; the inner is apparently the central portion of a pyramid showing striations, and is red in the center. Middle zone is a ring around this, is elevated and consists of yellowish-gray, pinhead areas, many of which are red points. The uneven junction between these two zones is dull slate-color with some dark-gray points. Outer zone is dull gray, and is interrupted by cortical tissue at medial distal corner. Smear from second zone shows polynuclear leukocytes but no tubercle bacilli or other organisms. Frozen sections show black deposits."

Professor Mallory states that "the collargol was injected into the kidney tissue as a result of running the catheter too far into the pelvis of the kidney. . . . Evidently the point of the catheter went into a calix and the fluid was injected under pressure into that part of the kidney which drained into that calix."

He mentions having seen one other case in which the kidney was damaged by a collargol injection.

In 1913 Tennant[4] reported a case which presented pathologic conditions in the kidney identical with those that I had observed.

Two injections were made into each kidney pelvis at intervals of five weeks. Pain followed each injection, particularly on the right side after the last injection.

Roentgenograms showed not only the outline of the kidney pelvis, but also a shadow well out in the parenchyma, extending from the center of the right kidney, and infiltrating its upper pole. This shadow was not understood or explained until operation two weeks later, when, after the kidney was freed from a great amount of inflammatory adhesions, an infarct 2 inches wide, and extending down to the renal pelvis, was exposed and resected. Microscopically, the same conditions were present as reported in my cases.

Kelly[5] says that in two cases in which he operated after collargol injection the perirenal tissues were stained a greenish black, the collargol having passed through the intact pelvis. In neither case was an excessive amount used, nor was it run in rapidly. He notes that one case required prolonged drainage.

Stover, in a foot-note to Tennant's paper,[4] states that out of about forty instances of injections of the kidney pelvis under pressure, in early hydronephrosis due to ureteral obstruction, he had seen only two cases in which there was infiltration of the renal parenchyma.

While still insisting that ureteropyelography has been without fatality or permanent injury in his hands in more than one thousand cases, Braasch* states that instances have been reported by Buerger in which deposits of silver, with surrounding foci of evident suppuration were found in the cortex of a kidney which was

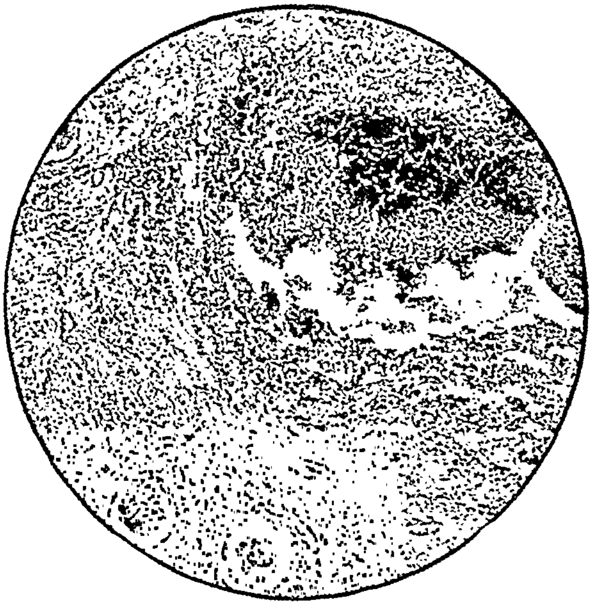

Fig. 5.—Collargol in the center of an abscess, Case 1; × 60.

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[4] Tennant: The Cause of Pain in Pyelography, with Report of Accident and Experimental Findings, Ann. Surg., 1913, lvii, 888.

[5] Kelly and Lewis: Silver Iodid Emulsion: A New Medium for Skiagraphy of the Urinary Tract, Surg., Gynec. and Obst., 1913, xvi, 707.

* Braasch, William F.: Recent Progress in Ureteropyelography, Jour. Michigan Med. Soc., April, 1913, No. 4.

removed following pyelography, and that three similar cases have been observed in the Mayo clinic. He also observed two cases of hydronephrosis injected with methylene-blue solution, which showed, at operation, cortical areas colored with the distending solution.

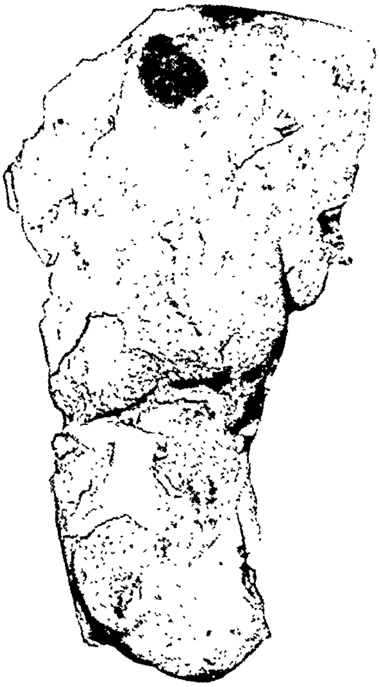

Fig. 6.—Outer surface of kidney in Case 2, showing blackened nodules on the surface.

Tennant's case, however, is the only one reported in detail in this country, up to the present time.

On reviewing foreign literature I find the following:

A report by Oehlecker,[6] 1911, of a case in which collargol-stained infarcts and microscopic findings exactly like those of Tennant and myself followed injection for pyelography.

A report by Troell,[7] in 1913, of a case in which the injected collargol had ascended into the parenchyma of the kidney, and was found in the tubules and in the capsules of the glomeruli.

A report by Zachrissen,[8] in 1911, of a case in which, by mistake, 14 c.c. of collargol solution were injected into the wrong kidney. This was followed by pain for five days, fever fourteen days, tenderness for some time, and the presence of casts in the urine from that side at the end of a year. The roentgenograms showed, as in Tennant's case, the outline of the pelvis, and also distinct dark shadows or streaks in the interior of the kidney, indicating that the injection had "certainly extended into the tubuli recti, and perhaps even higher."

A report by Roessle,[9] in 1910, of a fatality which he considered due to collargol poisoning, following an injection for pyelography; and, while this death might have been due to other causes, the kidney showed the presence of the injected collargol inside the tubules, and corresponded closely with the other cases reported.

Ekehorn,[10] operating *five days after* collargol injection, found marked renal edema, and Jervell[11] mentions observing a "wedge-shaped gangrenous area in the kidney" after the injection of collargol.

Experiments of Blum, Oehlecker and Tennant show results very similar to the observations on human beings.

Blum,[12] using cadaver kidneys or extirpated kidneys, found that collargol passed through the ruptured collecting tubules, along the urinary canals and lymph-spaces of the kidney, and under the capsule. He noted some instances of severe cauterizing effects on the mucosa of the kidney pelvis.

Oehlecker,[6] using cadaver kidneys, found that collargol remained in the pelvis and in the calices, unless considerable pressure was used, when it was possible to force it into the tissues of the kidney.

Tennant,[4] using fresh pig kidneys within one hour after removal from the animal, found that "infiltration of the parenchyma and free diffusion under the capsule of the kidney were almost simultaneous with the distention of the renal pelvis." This occurred at once with 18 c.c. of collargol at a pressure of 240 mm. of mercury, in one minute with 10 c.c. at a pressure of 10 mm. of mercury, and in five minutes with 14 c.c. at a pressure of 50 mm. of mercury. Sections of his kidneys showed the same microscopic appearance as in his clinical case, except that no collargol was found in the capsules of the glomeruli. From these observations Tennant concludes that pain during injections of the kidney pelvis is not simply an indication of colic from overdistention of the pelvis, but that it indicates, or may indicate, a much more serious condition, namely, infiltration of the renal parenchyma with the injected material. That this diffusion may take place simultaneously with the filling of the renal pelvis, and, presumably, at the time of the appearance of the pain, his experiments abundantly prove.

It will be seen that in all the cases presented in which the reports have been given in detail, as well as in all the experimental cases, the pathologic changes have been practically identical with my own; and we may safely infer that the gangrenous wedge-shaped area in Jervell's case belongs in the same group, and that the roentgenograms in Zachrissen's case show that his patient's kidney received the same sort of injury.

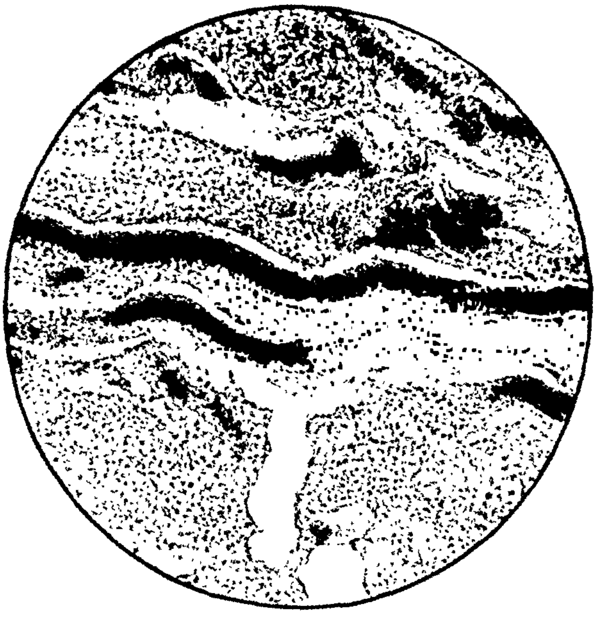

Fig. 7.—Collargol-stained casts in straight tubules from Case 2; × 90.

By collecting these isolated clinical and experimental reports and comparing the findings, we are able to show, by the identity of the pathologic conditions, that a definite sequence of events follows injection of the renal pelvis if the intrapelvic pressure is raised beyond a certain unknown point.

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[6] Oehlecker: Uebersichtsaufnahmen vom uro-poetischen Systeme (Pyelo-Kystographie), Fortschr. a. d. Geb. d. Roentgenstrahlen, 1911, xvii, 195.

[7] Troell: Fall af pyelografi, där kollargol inträngt injurens urinkanaler och Malpighiska kroppar, Hygiea, Stockholm, 1913, lxxv, No. 2.

[8] Zachrissen, 1911. Nord. Med. Ark., Abd. 1, No. 2.

[9] Roessle: München. med. Wchnschr., 1910, No. 5.

[10] Ekehorn, quoted by Key: Hygiea, 1911, No. 2.

[11] Jervell's case is referred to by Strassmann, Key, and Troell, but no record of its publication has been found.

[12] Blum, Victor: Ueber den Werth der Pyelographie und anderer Methoden zum Nachweis von Dilatationen im Nierenbecken; Wien. med. Wchnschr., 1912, No. 19.

This sequence consists in the filling of the pelvis, and the ascent of the injected material, along with any infectious matter in the pelvis, into the straight and convoluted tubules and into the glomerular capsules. This may be followed by the rupture of the tubules with dissemination of their contents into the surrounding tissues, with the production of infarcts and abscesses, and progressive inflammation of the kidney and perirenal tissue.

The part that the collargol itself may play in the destructive changes is much in dispute. Some observers attribute severe cauterizing and irritating effects to this agent, others asserting that there is no injurious effect on the tubular epithelium or other parts of the kidney tissue. As collargol is the substance almost universally employed in the injections, we have no other drug or chemical used under like conditions of pressure in a series large enough for comparison.

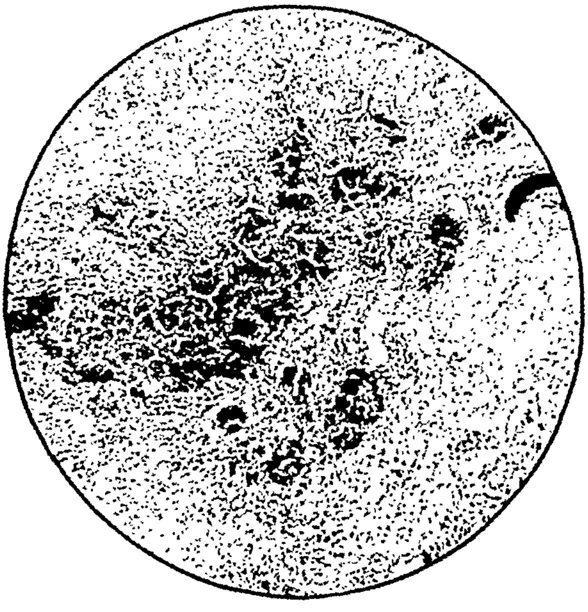

Fig. 8.—Collargol in tubule, Case 2; also broken-down kidney-tissue with collargol disseminated throughout the tissue; × 60.

Strassmann,[13] in 1913, reviewed the question, and reached conclusions differing from the findings above set forth. He criticizes the experiments of Blum and Oehlecker, on the ground that there is too great difficulty in distinguishing between cadaveric changes and necrosis due to collargol, unless absolutely fresh material were used; also on the ground that Blum used too great pressure in his injections, and that the conditions surrounding his experiments were not normal and not comparable with experiments on the living. He thinks that conclusive experiments can be made only on living animals. He argues conclusively that the death which Roessle ascribed to collargol poisoning may have been due to some other cause. His explanation of the infarcts observed by Oehlecker is that the tumor compressed the neck of the renal pelvis and interfered with the discharge of the collargol and thus forced it into the tubules.

Together with Voelcker, he conducted a series of very delicate experiments on rabbits. Under anesthesia, the ureters were exposed and ligated, and the kidney pelves injected with collargol under the guidance of the eye, the amount of distention being easily seen. The fluid was retained in the pelvis for varying lengths of time, after which it was allowed to flow out and the kidney was removed for examination.

A summary of his observations is as follows:

From the renal pelvis occurs a rapid diffusion of the solution into the connective tissue surrounding the kidney. The renal capsule is swollen shortly after injection and distinctly blackened in some portions. The injected collargol ascends, in part, into the connective tissue and lymphatic spaces of the kidney, particularly *in the space around the urinary canals,* and may ascend as far as the cortex. One may then see the urinary tubules surrounded by black masses. The intensity of discoloration of the capsule was directly proportionate to the time the collargol was retained in the pelvis.

The lumina of the tubules remained free. He states that, inasmuch as his injections were made under slight or only moderate pressure, the collargol advanced only as far as the renal pelvis. He asserts that there was no harmful effect on the pelvic mucosa, and that the silver masses surrounding the tubules exerted no injurious effects on the latter. He states that he used quantities of fluid in excess of the pelvic capacity, and that such quantities need not cause any injury.

He does not report the production of any infarcted areas; and, as his assertion is that the tubules remain free from the collargol and that the collargol ascends around the tubules, there could be no rupture of the tubules from pressure inside their lumen. His explanation of Oehlecker's infarcts may have been correct in that instance, but does not hold good in other cases.

His results, at such variance from the data here presented, prove only that it is possible to inject the kidney pelvis without damaging the parenchyma, an operation which has been done often enough for us to admit without question.

They do not prove that injections are free from danger, nor, in the light of the further evidence here presented, that the tubules and renal parenchyma may be expected to escape injury if the pressure within the pelvis is raised beyond a certain point.

It is scarcely possible to carry out, in man, an injection of the renal pelvis under the delicate control of pressure and pelvic distention that Strassmann exercised in his experiments, with the ureter and kidney in plain sight. We can only approximate his work clinically, by making injections with the utmost gentleness, and should avoid them if there is any interference with the rapid return flow of the injected material.

In an endeavor to account for the difference between Strassmann's pathologic observations and those of others, it has occurred to me that in his experiments he observed the process of normal absorption from the kidney pelvis of material present therein, but not under tension; whereas in the other cases the process was not one of passive absorption, but of active diffusion of the material under the influence of hydrostatic pressure inside the kidney pelvis.

This will explain, also, why so many injections have safely been made, and why such injuries as I have reported sometimes occur.

In his earlier writings Braasch advocates pyelography in practically every kidney disturbance requiring investigation; in one paper enumerating no less than fifteen conditions in which it was indicated, including hydronephrosis, pyelitis, pyonephrosis and renal tuberculosis.[2]

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[13] Strassmann, Georg: Effect of Collargol Injections on the Kidney and Kidney Pelvis, Ztschr. f. Urol. Chir., 1913, 1, Nos. 1 and 2.

In his papers for 1913, some modification of his former teachings is found, in that he states that it is contra-indicated in large hydronephroses, and in any case in which the pelvis cannot readily drain itself of the injected solution; that in malignant renal tumors it should not be used except *when other means of diagnosis fail to identify the tumor*;[14] that in his experience, severe reactions following pyelography have been due either to errors in technic or to lack of care in the selection of cases; and that pyelography should not be employed unless the existence or nature of a lesion in the urinary tract cannot be diagnosed in any other way.

To lessen the danger of overdistention, the gravity method of Thomas, or the still more accurate method of Tennant, who used a mercury manometer for estimating pressure, should be used. Even then the danger is not eliminated, for as yet we have no method of estimating the amount of pressure that may be safely used in any given case; and, as this must vary in every case, a standard for comparison must be very difficult to establish.

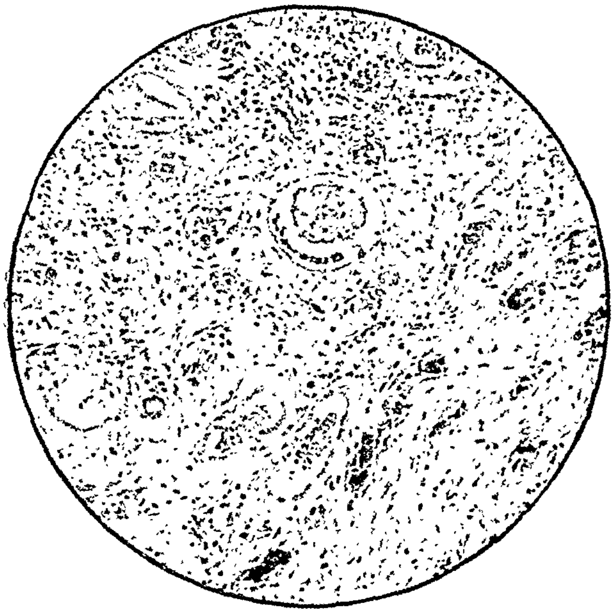

Fig. 9.—Section from Prof. Mallory's case; collargol in tubules and inside the capsule of a glomerulus; × 110.

The cases here presented prove that solutions injected into the kidney pelvis may, under circumstances which are not entirely under our control, ascend into the tubules and out into the surrounding kidney tissue carrying with them such infectious material as may be present in the pelvis and set up serious inflammatory lesions. With this clearly established, it would seem that injections are contra-indicated in the presence of infection in the kidney or kidney pelvis, and in cases in which the integrity of the kidney has been impaired by injury or disease.

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[14] Braasch, William F.: Clinical Data on Malignant Renal Tumors, The Journal A. M. A., Jan. 25, 1913, p. 274.

Style.—Nothing is easier than to write so that no one can understand; just as, contrarily, nothing is more difficult than to express deep things in such a way that every one must necessarily grasp them.—Schopenhauer.

RADIUM IN THE TREATMENT OF BLASTOMYCOSIS

WITH REPORT OF A CASE

FRANK EDWARD SIMPSON, M.D.

CHICAGO

In a previous article[1] the case now reported more fully was briefly referred to.

So far as I can learn, radium has not been used hitherto in the treatment of blastomycosis. *A priori* it was expected that radium would be effectual in this disease, and the opportunity of treating a case presented itself in May, 1913.

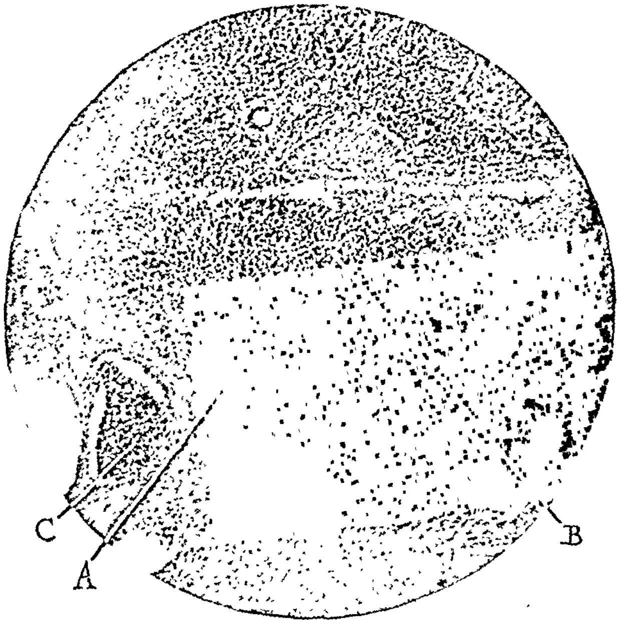

Fig. 1.—Transverse section showing proliferated epithelial layers (*A*) and one large (*B*) and one small (*C*) abscess; × 90.

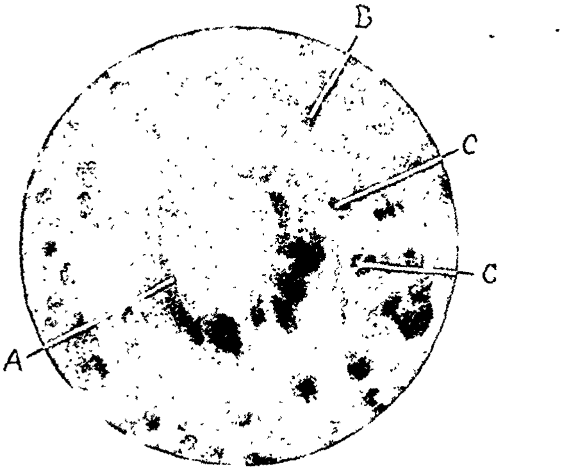

Fig. 2.—From same section. Multinuclear giant-cell (*A*) surrounded by epithelial cells (*B*) and polynuclear leukocytes (*C*); oil immersion; × 650.

History.—The patient, a man, aged 24, came under observation at the Chicago Policlinic Hospital with a lesion at the inner canthus of the left eye. The lesion, which was of three months' duration, involved the upper and the lower lid and covered an area of about 2 sq. cm. (Fig. 3). It was of verrucous aspect, but at the periphery an inflammatory border ⅛ inch wide was present containing a few abscesses the size of pin-points. Pus could easily be squeezed from between the papillae of the patch. The clinical diagnosis of blastomycosis was made. In a smear from the peripheral abscesses, Dr. J. S. Lindholm demonstrated the blastomyces. The patient had previously sought treatment from several oculists in another city and had refused excision, which had been advised.

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[1] Simpson, Frank E.: Radium in Skin Diseases, The Journal A. M. A., July 12, 1913, p. 80.

Treatment.—Radium treatment was tentatively advised. A radium varnish applicator, one-quarter strength, containing 0.04 gm. of radium-barium salt was easily applied. An exposure of three hours was given in fractional doses in the course of three weeks. A slight inflammatory reaction ensued. This caused no pain and was followed by the complete disappearance of the lesion. A few weeks later two minute points at the extremities of the lesion on the upper and lower lids were noted by the patient. An exposure of fifteen minutes was given to each place with complete recovery (Fig. 4), which has been maintained to the present time.

Result.—The beauty of the cosmetic result cannot, I believe, be exceeded by any other method. Not the slightest tendency to ectropion can be observed, and the site of the lesion is almost imperceptible. When the patient was first seen a small piece of tissue was removed from the lower part of the lesion for microscopic examination. Dr. Maximilian Herzog kindly examined the sections, and I am greatly indebted to him for the following report:

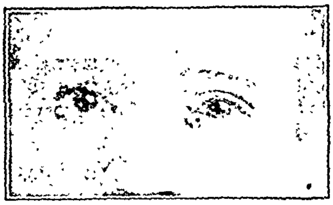

Fig. 3.—Patient with blastomycosis.

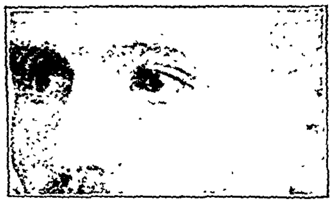

Fig. 4.—Patient after recovery.

Microscopic Report.—A small piece of tissue was fixed in Zenker's solution, subsequently embedded in paraffin, sectioned and stained. The microscopic examination failed to show the characteristic double-contoured, budding blastomyces, but the histologic structure found was that seen in typical blastomycotic dermatitis. The sections show the following:

The epithelial layers are very much thickened and the epithelial masses here and there rise in irregular projections. The interpapillary epithelial pegs, widened and much elongated, project deeply downward. The proliferated epithelial masses are riddled with small abscesses, varying from microscopic to pin-head size (Fig. 1); hence some of them clearly can be seen with the naked eye in the sections. Loosely attached to the outermost epithelial cells are completely or partially desquamated horny scales. There is no clearly recognizable stratum lucidum, but the epithelial cells next to the horny layer show a rather excessive amount of granular keratohyalin. The epithelia next to the stratum granulosum are quite normal in character with well-defined intercellular prickles; the nuclei are normal in appearance; karyokinetic figures here and there are seen. The cells situated in the older layers of the elongated and widened interpapillary pegs are somewhat degenerated; the prickles are not distinct; the nuclei are shrunken and situated in a vacuolated cell protoplasm. Migrated polynuclear leukocytes are found between the epithelial cells.

Some of the larger abscesses have broken toward the surface, but they are still partially covered by desquamated horny scales. The smaller abscesses are completely surrounded by epithelial layers. The abscesses contain numerous densely crowded polynuclear leukocytes, mostly of the neutrophil variety, few eosinophilic cells only, red blood-corpuscles and epithelioid cells, the latter evidently derived from fixed connective-tissue cells, and occasionally a multinuclear giant-cell (Fig. 2). A remnant of a vessel also was seen here and there, showing that the abscesses are primarily developed in connective tissue (papillary layer) and only later on become surrounded by the proliferating epithelial cells. The papillae between the enlarged epithelial pegs and the cutis generally show an extensive inflammatory infiltration of both proliferated fixed connective-tissue and wandering leukocytic cells.

59 East Madison Street.

MENTAL HEALING

AN ADMONITION

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We have all heard much within the last few years about psychopathology and psychotherapy. The very words, especially the latter, have crept into the daily press and thence into focal interest of the lay mind. Popular books have been published on the subject, and soon thereafter, garbled by dilettantes, sundry articles in monthly and weekly magazines. At the same time the stage took up the theme of all-influencing and influenceable mind. In consequence, the layman to-day is doubtless as well informed on the subject—most superficially of course — as the majority of physicians. Religious cultism with metaphysical offshoots, new thoughtists, chiropractics, etc., have sprouted like mushrooms over night. These "schools" have overrun the land and with undaunted persistence have spread and fastened their propagandas until they stand firmly as monuments of shame to the poor belated imagination and poorer insight into human nature of the very men who should be trained to know men best. The secessionists to these ultraschools run up to vast thousands—and no sooner do they enter than they themselves become charged with proselytism and prove an attracting source on every side.

It has taken long for the physician to recognize this; he grasps it but vaguely now—or he would stand aghast. Countless times has he read of the power of mind over body and functions—but all the while kept his myopic eyes just on disease—disease, the cause of which was assiduously assayed and treated with scarcely a thought of the patient who stood beside. But disease does not always respond to treatment, or only but slowly, or indeed but poorly in poor hands. Beside there are a host of morbid conditions which become protracted by inviting attention on them. And sick mortals are impatient. In the meantime the afflicted have heard the call "the doctors gave him up, but the 'healer' got him well"; and with curiosity mixed with hope, infected with the suggestion inherent in the thing "yes, maybe it *is* so"—urged the trial, and expectant and attentive, saw the "miracle" come true.

Who doubts it for a moment? Who that knows but an iota of the psychology of *expectant attention* will deny its plausibility, or *can* doubt it to be true! And who among us has not now heard of patients doing poorly in medical hands who prospered when they took up "Science"? Do not our own colleagues recommend "healers" for functional disease, for "imaginative troubles and things"? And who does not notice with alarm the rise of cult after cult, the glaring prosperity of these churches, the sprouting of proselytes in every town—

they have long since entered the universities—and the mass of books and publications launched in the cause? Indeed, there are many cures in such hands and we must recognize them, even though we perceive the dangers too in their utter lack of scientific knowledge and know their grave mistakes. Is there then a specific healing unknown to medicine and ineffectual in physicians' hands, so that we must call in the stranger's aid? What then is the secret of this world-wide migration to another fold, this lost respect for our traditions, this spreading hope for health in a faith that makes one whole?

The history of faith-healing — of psychic therapy — goes back to the beginning of recorded time. It had its uphill periods of interest and lapses of neglect—for even Plato[1] reproved the physicians of his age for treating the body as though it had no soul—but from then unto the present, whether in the incensed fanes at Nineveh or in the "office" of our own nostrum-vending days, the witchery of voice and eye, the magic of personality, the fervor of religion, the awe of things strange and new, all wove a spell on the mind that made for health. Many were its masquerades, from magic and occultism, through magnetism, mesmerism, tractorism, the lure of words, amulets, reliques, holy grottoes, pilgrimages to tombs of the dead, anon to the glamor of names, the acclamation of labels,[2] the "imported," the "electric,"[3] the religiomysticism of to-day—Theosophy, Christian Science, Emmanuelism, New-Thoughtism, etc. —and finally the sexuo-analytic with its secret singular allure. And what of the thousand drugs that cured and now are proved inert?[4] All masks for psychic forces.

What as physicians do we know, definitely and scientifically, about this activity, this energizing power in the mind which the history of medicine throughout the centuries has taught us can be awakened in a thousand different ways, and which once activated has such immense influence on metabolism, the physiologic functions, the very vitality of the body it controls? What do students learn, actually and practically learn, about it? Is not medicine as taught to-day a matter of disease and the treatment of disease? Do we think for a moment about personality, and variations of reactions in different persons, or of interrelations of mind and body? In short, we have for the most part forgotten that we are dealing with human beings, individuals, in whom as Virchow said, disease is not an entity but merely shows the course of the vital processes under altered conditions. As for the mind, so impalpable a thing could be left to the metaphysician and the quack.

Nor must that platitude be constantly repeated that mentally one can influence but functional disorders—belittling these as if they were just, in layman terms, "imagination." Of course, in the field of psychogenic disorders (and it is a vast field, let it be remembered) one can accomplish most. It is in this field that psychotherapy is, so to speak, *specific*. But the mind, we have said, may also influence metabolism, secretion, etc.; therefore, it may directly or indirectly also influence organic change.[5] Long ago Galen[6] said that he worked the most cures in whom most had faith; and Paracelsus, centuries after, wrote, "Faith produces miracles, and whether the object of your faith be real or false, you *will nevertheless obtain the same effect*." So we also read in Burton's "Anatomy of Melancholy" how fancy and a good conceit may cure just as it may bring on disease:

> As some are so molested by phantasy, so some again by fancy alone and a good conceit are as easily recovered. We see commonly the toothache, gout, falling-sickness, biting of a mad dog and many such maladies, cured by spells, words, characters and charms; and many green wounds by that now so much used *unguentum armarium*, magnetically cured. . . . All the world knows there is no virtue in such charms or cures, but a strong conceit and opinion alone. . . . An Empirick oftimes, and a silly Chirurgeon, doth more strange cures than a rational Physician. Nymannus gives a reason, because the Patient puts his confidence in him, which Avicenna prefers before art, precepts, and all remedies whatsoever.

In our more modern times, Osler, one of the foremost of us all, has reiterated this truth, writing:

> Yet, after all, the psychical method has always played an important though largely unrecognized part in therapeutics. It is from faith which buoys up the spirit, sets the blood flowing more freely, and the nerves playing their parts without disturbance, that a large part of all cures arises. Despondency, or lack of faith, will often sink the stoutest constitution almost to death's door; faith will enable a bread pill or a spoonful of clear water to do almost miracles of healing when the best medicines have been given over in despair. The basis of the entire profession of medicine is faith in the doctor and his drugs and his methods.

Of the truth of such statements as these there is no doubt. Nor can there be a doubt as to their profound importance. And yet is the subject actually allotted more than foot-note's space within the minds of physicians or the curriculum of medical schools? What student goes forth with a knowledge that enables him to say: I need no "healer," "new thoughtist" or other only too often dangerously unscientific and misleading reasoner to help me in my practice; I too comprehend and know how to wield those mental forces that aid and cure—and using the lancet, serum, Roentgen ray, and every appurtenance that science brings to light, beside, do not forget but rather all the more rationally employ the word, the "charm" — as Plato puts it — and so am likewise able to create that neurodynamic flow within the mind which, once engendered, itself irradiates into the cells, and pulses on to health!

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[1] Plato seems to have had an astonishingly definite idea of *this entire matter*. In his Dialogue of Charmides, Socrates says: "So *neither ought you to attempt to cure the body without* the soul; and this," he said, "is the reason why the cure of many diseases is unknown to the physicians of Hellas, because they are ignorant of the whole, which ought to be studied also; for the part can never be well unless the whole is well" . . . "And therefore if the head and body are to be well, you must begin by curing the soul; that is the first thing. And the cure, my dear youth, has to be effected by the use of certain charms, and these charms are fair words; and by them temperance is implanted in the soul and where temperance is, there health is speedily imparted, not only to the head but to the whole body. . . . For this," he said, "is the great error of our day in the treatment of the human body, that physicians separate the soul from the body." (Dialogues of Plato trans. by Jowett, Edit. of Scribner's 1911, p. 10.)

[2] How vast the output of patent and proprietary drugs and concoctions used by the people and prescribed by physicians who know not a whit of what is contained—but recognize its worth because a folder says it's so!

[3] One thinks with a smile of a decade of "electric belts," selling at forty to one hundred dollars apiece—the great panacea for lost manhood and lost womanhood!

[4] They cured while new, while it was said this is *the* new cure, etc. Even Plato has commented on the psychic ingredient of drugs. "I replied that it was a kind of leaf (anent a cure for headache) which required to be accompanied by a charm, and if a person would repeat the charm at the same time that he used the cure he would be made whole; and that without the charm the leaf would be of no avail." (Dialogue of Charmides.)

[5] Think for instance of arteriosclerosis and subsequent nephritic trouble induced by long-standing nervous and mental strain. These are the very cases so often helped by "healers" when physicians who have only drugs to offer fail. This does not mean that the "healer's" method is rational or should be encouraged. His method is most irrational, most dangerous, and should be drastically condemned; for he might as easily overlook a diabetes and the patient die (such a case has just occurred in Berlin) or a neoplastic or pyogenic process necessitating rapid surgical intervention. Nor does it mean that because certain psychologic processes set into activity are potentially remediable, that we should advise ablution at Lourdes, or the carrying of amulets, etc., for rheumatism! No, the drug, the orthopedic procedure the fomentation is of importance, is *the therapeutic measure in its place, namely*, when *indicated*. Hence the careful diagnosis! yet—and this is to be remembered—psychotherapeusis is at *all times* helpful, but when especially indicated, of paramount importance. This is the lesson for physicians *to learn; and still more, that psychotherapy does not mean* Christian Science any more than it does occultism. It means a knowledge of certain psychologic factors and the endeavor, thereby, to revive the normal functioning by making mental readjustments and stimulating and directing potential energy into the proper paths.

[6] *According to Burton* ("*Anatomy* of Melancholy") "'Tis *opinion alone (saith Cardan) that makes or mars* physicians, and he doth the best cures, according to Hippocrates, in whom most trust."

60 West Eighty-Fifth Street.

PRIMARY CARCINOMA OF THE PANCREAS

IN A PATIENT TWENTY-TWO YEARS OLD

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The following case is recorded not only to emphasize the fact that cancer is by no means confined to the later period of life, but also as an illustration of the difficulty, often enough encountered even by surgeons of wide experience, of distinguishing between two pathologic conditions, the one an inflammatory process amenable to treatment, the other, a most deadly and hopeless form of malignant disease.

To the works of such men as Riedel, Mayo Robson, the Mayos, Deaver and Moynihan, we owe a definite knowledge of chronic interstitial pancreatitis, its etiology and treatment, but we have not, I think, arrived at any sure reading of clinical signs, by which this condition can, with certainty, be distinguished from pancreatic carcinoma. As a matter of fact, an exploratory incision will not always suffice to clear up the diagnosis.

The rule of Courvoisier may enable us with reasonable certainty to exclude gall-stones as the cause of obstructive jaundice, but does not enable us to say whether the jaundice is due to pressure on the duct by malignant growth or by swelling of the pancreatic substance due to inflammation. Although, as William J. Mayo points out, "it is the rule that primary jaundice with the presence of a distended gall-bladder indicates malignant disease— an exception must be made of the not infrequent cases of pancreatitis which do not have their origin in gall-stones, and therefore may have a distended gall-bladder."[1] In this connection, too, the words of Moynihan are instructive. Speaking of pancreatitis, he says, "Its mimicry of carcinoma may be complete. Painlessly and progressively the patient may develop jaundice which continues to deepen until the 'black jaundice' of the older writers can be recognized. There is great loss of weight, and prostration, hebetude and misery, though often the appetite is unimpaired. The liver enlarges and the gall-bladder distends to a degree which allows it to be seen and felt protruding below the rib margin. In accordance with the law of Courvoisier we assume that such a dilatation of the gall-bladder is due to causes other than stone. An examination of the stools might show a complete absence of bile pigment, and this may seem the most conclusive evidence of carcinoma, for a chronic inflammation, however inveterate, rarely causes an impenetrable block to the passage of bile."[2] He goes on to say that such patients should be operated on, however positive the diagnosis of malignancy may be. "There will be benefit in either case. I have patients still living on whom I operated four, six and seven years ago, in the confident belief that they suffered from carcinoma, and would shortly be dead."[2]

REPORT OF CASE

Patient.—Man, aged 22, American, a soldier of the Hospital Corps, U. S. Army, admitted to hospital Aug. 27, 1913. He gave no history of any previous illness except typhoid fever at the age of 9. Denied venereal infection of any kind.

Present Illness.—About a week before admission to the hospital, he noticed the appearance of jaundice, coincidently with "indigestion," poor appetite, irregularity of the bowels, feeling of weakness. He was conscious of a slight pain, or rather a feeling of discomfort in the epigastrium, but no tenderness was apparent in that region. There was no history of trauma. Physical examination showed nothing of any importance except rather marked icterus, no tumor was palpable in the region of the gall-bladder. The urine was negative except for the manifest presence of bile. Stools were white, greasy and offensive. The case was diagnosed and treated as acute catarrhal jaundice. Considerable improvement followed and the patient was returned to duty Aug. 31, 1913, but remained under observation. During the next couple of weeks he still complained of occasional attacks of nausea, the appetite again became poor, the feeling of epigastric discomfort returned and the icterus, which had never entirely disappeared, began to deepen until it was more marked than ever. Sept. 14, 1913, he was again admitted to the hospital. Distention of the gall-bladder could now be recognized by percussion, he complained of intense itching of the skin which kept him awake at night, very poor appetite, acid eructations and nausea after meals, a feeling of great weakness and prostration. The stools showed no tinge of bile.

First Operation.—The patient was operated on Sept. 18, 1913. The gall-bladder was found greatly distended, the head of the pancreas was distinctly enlarged and hard, but not nodular. A single lymph-gland was palpable in the fissure of the liver. The gall-bladder contained a large amount of very dark, thick bile (about 4 ounces were removed by aspiration). When the gall-bladder was opened, the mucous membrane was found normal. Examination of the duct showed nothing to account for the obstruction except the pancreatic enlargement. The gall-bladder was stitched in the wound and biliary drainage established.

Great relief followed this operation, but the results were on the whole disappointing. The jaundice did not disappear, though it was greatly diminished. The appearance of the stools did not change. The bodily nutrition did not improve, though it was fairly well sustained. The patient became very restless and chafed at the confinement to bed. The biliary fistula became extremely annoying to him, and when the operation of cholecystenterostomy was suggested and explained he eagerly requested to have it done, declaring that he would do anything to get rid of the fistula.

Second Operation.—Oct. 18, 1913, I again opened the abdomen, freed the gall-bladder from the abdominal wall and anastomosed it to the jejunum behind the transverse colon by means of a small Murphy button. The head of the pancreas was found to have increased greatly in size since the preceding operation, the body of the gland was also enlarged, and, although there did not seem to be any further involvement of the lymph-glands, the suspicion of a malignant tumor became a practical certainty. The patient made a good recovery from the operation, the wound healed readily, and the stools became dark with bile, but he had frequent attacks of pain and vomiting. Emaciation became more marked; the condition gradually became one of cachexia. The patient was transferred to the Base Hospital at San Antonio, Tex., Nov. 25, 1913, where he died December 16, following.

Necropsy.—From an excellent report of the necropsy, furnished me by Captain C. L. Cole, Medical Corps, U. S. Army, I extract the following:

Left lobe of the liver found markedly enlarged, extending to the level of the costochondral junction of the seventh

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1. Mayo, William J.: The Surgical Treatment of Pancreatitis, Collected Papers, The Mayo Clinic, 1905-1909.
2. Moynihan, Berkeley: Brit. Med. Jour., July 26, 1913.

rib and on the left side to within 1 inch of the thoracic wall. Marked adhesions throughout. Numerous nodules over the anterior surface from which on opening a greenish-yellow pus exudes. Marked adhesions throughout the hypochondrium. Intestines grayish in color with marked enlargement of all mesenteric glands.

Capsule of spleen adherent to its bed.

Large mass involving lower border of liver in the region of the gall-bladder, entirely surrounding the duodenum, involving the head of the pancreas and extending one-half its length to the tail. Tumor attached to the liver enclosing the remains of the gall-bladder.

When sectioned, the tumor has a lemon-yellow color throughout. That portion involving the head of the pancreas shows connective tissue bundles enclosing numerous islands giving very much the appearance of fatty tissue, is firm in consistence. While that portion of the tumor attached to the under surface of the liver appears to be composed entirely of connective tissue with whorls of tissue lighter in color enclosed, this portion of the tumor is less firm in consistence than that portion involving the pancreas.

Section of Liver and Tumor: A distinct line of demarcation exists at the line of junction of tumor with surface of the liver with very slight tendency of tumor cells to invade the liver. At a few points, while the capsule of the liver shows no marked invasion, there are areas just within the capsule of the liver which show some invasion and the capsule at these points is thinner than at others. There is some invasion, however, of the capsule of the liver. The blood-vessels of the tumor, of sufficient size to be readily distinguished, possess distinct thick walls while the smaller vessels possess an endothelial lining. The tumor contains fat.

Section of Tumor Involving Pancreas: The arrangement of the cellular group shows some remains of the glandular tissue of the pancreas with very little connective tissue and these surrounded by round cells showing mitotic figures. Blood-vessels show distinct endothelial lining. Section contains fat, as shown by special technic for the demonstration of that substance; no intercellular substance.

The micro-organism isolated from the abscess of the liver is one of the colon group and evidently formed abscesses subsequently to the occlusion of the bile passages by the tumor growth. The Cammidge reaction was negative prior to the death of this patient.

The condition is primary carcinoma of the pancreas, involving at the time of death, the duodenum, gall-bladder and attached to the under surface of the liver. Secondary multiple abscess formation in the liver, nephritis, degeneration of the splenic tissue.

It is worthy of remark that sugar was not found in the urine of this patient at any time. In view of the history of typhoid in early life, the bile was examined for typhoid bacilli and found negative for this organism.

Our increased knowledge of interstitial pancreatitis gives a chance for a hopeful prognosis in many cases, where formerly the clinical picture would have been regarded as conclusive evidence of a fatal condition. When in such cases operation revealed an enlarged pancreas with obstruction of the common duct and distended gall-bladder containing no calculi, the patient was unhesitatingly pronounced to be beyond the aid of surgery. To-day, however, we are not justified in any such gloomy prognosis, unless there is further and undoubted evidence of malignant disease. On the other hand, cases like the one here reported teach us not to be too confident, even when the evidence is strongly in favor of a benign condition. The extreme youth of this patient would of itself be a strong argument against a diagnosis of carcinoma, yet the necropsy findings leave no doubt that he died of carcinoma originating in the pancreas.

PERIMYOSITIS CREPITANS

REPORT OF A CASE

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A case of perimyositis crepitans came under our observation in Cornell University Medical College Dispensary. On investigation of the literature, the disease was found to be quite rare, as only three cases have been reported.

The first case, which was reported by Günther,[1] was that of a woman, aged 60, with crepitation in the left rectus muscle of the femur, the cause of which was unknown.

The second case was reported by Pauzat.[2] The case cited here was in the three anterior extensor muscles of the leg in a soldier after a long march. Pauzat gives the pathology as an inflammation of the subaponeurotic cell-layer of these muscles with a fibrinous exudate and then crepitus.

The third case was reported by Bräuer.[3] A man, aged 39, received a fracture of both malleoli of the left leg in 1899. After treatment by many doctors for three years because of pain and crepitation in various muscles of both legs, in April, 1902, he came under Bräuer's observation, and on examination, marked crepitus was found over the hamstring muscles of the right thigh, the extensor muscles of the right leg and also crepitus in the muscles of the left leg and thigh, although less marked than on the right side. There were no swellings over the muscles, but there was tenderness on palpation; there was no muscular atrophy. Roentgenoscopy gave a negative result.

Bräuer gives the pathology as an inflammatory process which leads to a deposit of fibrin between the aponeurosis and the muscle, the symptoms of which are crepitation when the muscle is put into action; also a sensation of pain on movement. A report of our case follows:

REPORT OF CASE

E. H., aged 22, a second-year medical student at Cornell, came into the dispensary in order to ascertain the cause of the creaking which he had in different muscles of his body. The family history had no bearing on the case. The patient had had the usual diseases of childhood. There was no venereal history. For the past several years he had done a great deal of concert piano playing which caused him a great deal of physical as well as mental strain. For the past six months he had felt a crepitation in the muscles of the back over the left scapular and vertebral regions, and also in the neighborhood of various joints. This pain did not occur unless the muscles were put on a stretch. Pain occurred only on overexertion. The pain as described by the patient was of a dull aching character, such as occurs in the arm on throwing a baseball when not accustomed to it. He complained of no headache; he was troubled with slight constipation. He gave no history of external violence.

Examination revealed a young man of very good physical build and no appearance of being ill. The lungs and heart were normal. There were no enlargements of the lymph-nodes. On inspection no evidence was found of abnormality as would occur after external violence, nor were there any signs of inflammation, as redness, heat and swelling. The part was not painful to touch nor was there any loss of function. On placing the hand over the scapular muscles and having the patient put the muscles on a stretch and move them there was marked crepitus felt and a creaking was heard. The muscles along the vertebral column were affected in the same manner, as were also the muscles over the ankle- and wrist-joints.

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[1] Günther: Die hörbaren Erscheinungen der Gelenke im gesunden und kranken Zustande, 1854, Düren, Verlag Gislason.

[2] Pauzat: In Dums Händbuch der Militärkrankheiten, Äussere Krankheiten, Leipsic, 1896, Besold, p. 72.

[3] Bräuer: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1902, x, 758.

Roentgenoscopy revealed no calcification of the muscles or any abnormality in the joints or bursae surrounding the joints. The clinical pathologic findings were: blood normal, Wassermann negative, urine normal.

A piece of muscle was removed from the left scapular region where the crepitus was most marked. The specimen was examined in the pathologic department of Cornell University Medical College. The findings were localized thickenings in the aponeurosis and muscle which had been caused by hyaline swellings.

This case seems to be the only one in which there has been any pathologic and microscopic examination of the lesion.

CONCLUSION

The cause of this lesion is overexertion, resulting in small areas of rupture in the muscle and the aponeurosis, which are followed by minute hemorrhages and then hyaline thickenings. These thickenings cause a creaking when the two surfaces rub together. If there is any fibrin present it is absorbed very early.

316 West Ninety-Fifth Street.

OPHTHALMOPLEGIC MIGRAINE

WITH REPORT OF A CASE OF RECURRENT PARALYSIS OF THE RIGHT EXTERNAL RECTUS MUSCLE FOLLOWING PARTURITION

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Ophthalmoplegic migraine is a well-defined condition, and has been observed by many clinicians. Usually the muscles innervated by the oculomotor nerve are involved. Paralysis of the abducens is rather rare, although some cases have been reported in the literature. Pregnancy or parturition as a primary or contributory cause has as yet not been considered. The case I am here reporting therefore is of considerable interest from the point of view of rarity, as well as from that of etiology, as it strongly points to a toxemia as the exciting cause. I could find no similar case reported in ophthalmic literature.

Mrs. S. M., aged 35, came to the Lebanon Hospital Sept. 12, 1913, complaining of dizziness and double vision, as well as pain in the eyes. The following history was obtained: She had had the usual diseases of childhood, without other serious ailment, but had suffered occasionally from headache. The present history dates back five years, when after giving birth to her first child she suffered from a severe attack of headache confined to the right side of the head, which lasted for about two weeks. She also suffered from multiple recurrent abscesses of the eyelids. She did not vomit but was nauseated. When the headache began to subside she became dizzy and began to see double. She also noticed that she could not move the eye to the right, but had to turn her head. This lasted for about six weeks, when the diplopia disappeared and she felt well again. The multiple recurrent hordeola also disappeared simultaneously with the cessation of the migrainous condition.

The patient was free from any migrainous attack until the next childbirth, which came a year later. Following the second childbirth she again suffered from a severe attack of hemicrania confined to the right side, accompanied by multiple recurrent sties which lasted for about four weeks. She did not see double and had no vertigo, but remembers of having been annoyed by various flashes of light (scintillating scotomas). She was again free from migraine until she gave birth to the third child one year later. Again she suffered from severe hemicrania and the recurrent annoying and painful sties, which lasted several weeks. There was no diplopia. She was practically well except for some slight occasional headache until her last child was born.

Three weeks before I saw the patient, she gave birth to a healthy baby. All the previous children are living and in good health. Delivery was easy and normal. A few days after delivery she developed a severe headache confined to the right side. The pain was continuous and was not much relieved by medication. Simultaneously with the onset of the headache there appeared numerous sties on both upper and lower lids of both eyes. The patient was nauseated but did not vomit. The headache lasted for about three weeks. When it finally stopped she began to feel dizzy; vertigo and double vision prompted her to consult me.

On examination I found that the upper and lower lids of both eyes were swollen and inflamed as a result of numerous hordeola. The lids on account of the swelling were drooping and could be elevated only with difficulty. Corneas and pupils were normal. The right eye failed to move toward the right side beyond the median line. Diplopia was present. Images were farther apart when looking toward the right, but were of equal height. Ophthalmoscopic examination showed a normal eyeground.

The diagnosis was made of paralysis of the right abducens, probably migrainous in character. I applied treatment only to combat the local inflammation. Hot fomentations consisting of the following mixture were given:

	Gm. or c.c.	
Tincturae arnicae..................	20	℥ ss
Liquoris plumbi subacetatis diluti...	20	℥ ss
Tincturae opii......................	10	ʒ ii
Aquae camphorae....................	20	℥ ss
Aquae destillatae...........q. s. ad	100	℥ iii

September 18, the swelling was practically gone although there were evidences of the formation of new sties. Diplopia was still present, but the muscle moved much more beyond the median line. A tonic of iron and arsenic was given.

September 25 the external rectus moved much more freely; there was no manifest diplopia, but double images could be elicited by a red glass. The dizziness persisted except when the paralyzed eye was bandaged.

October 2, there were several sties on the lids; there was no diplopia, but dizziness persisted. Examination of the nose and throat revealed nothing abnormal excepting a slight catarrhal condition of the nasopharynx.

October 12, the patient was free from sties. There was no diplopia or dizziness; she felt perfectly well and was discharged. Her error of refraction was a low degree of hyperopia which had no bearing on the case.

Urinary examination was negative. No Wassermann test was made, but from the clinical aspect she was free from syphilis. There were no hysteric stigmata present. The diagnosis of ophthalmoplegic migraine is the only rational conclusion.

It is of considerable interest to note that this patient suffered only after giving birth to a child. She had two attacks of ophthalmoplegic migraine at an interval of four years, and two successive attacks of ophthalmic migraine. Each of these attacks was associated with recurrent abscess formation. I believe it highly possible that some toxemia of pregnancy is responsible for the condition in this case.

917 Spruce Street.

Service.—When we try to serve the world (or to understand it), we touch what is divine. We get our dignity, our courage, our joy in work because of the greatness of the far-off end always in sight, always attainable, never at any moment attained. Service is one of the ways by which a tiny insect like one of us can get a purchase on the whole universe. If we find the job where we can be of use, we are hitched to the star of the world, and move with it.—Cabot: What Men Live By.

Therapeutics

THE TUBERCULOSIS PROBLEM

The medical profession is confronted by the difficulty of determining how it can best modify the universal exaggerated fear of contracting tuberculosis from infected persons, and at the same time continue to obtain very necessary financial, legislative, municipal and personal aid in the cure, prevention and ultimate eradication of this most frequent cause of death.

It is never amiss briefly to recapitulate the data that make the problem of staying this disease so difficult. Hippocrates (460 to 377 B. C.) described consumption and stated that it was most difficult to cure, and was the most fatal disease. Galen, Avicenna and later Boerhaave and Morgagni, all recognized its communicability. In the middle ages, in 1550, Montano described tuberculosis to be a most dangerously contagious and easily contracted disease. It was so prevalent in European cities that in the seventeenth and eighteenth centuries active steps were taken to stay it, and in Naples a royal decree, dated Sept. 27, 1782, ordered the isolation of consumptives and disinfection of their apartments, personal effects, furniture, books, etc., by means of vinegar, brandy, lemon-juice, sea-water or fumigation. Any person violating this law was severely punished.

In round numbers, as estimated a few years ago, the civilized world loses by death from tuberculosis about 1,100,000 individuals annually, or 3,000 a day, or 2 every minute. The United States annually loses about 150,000 from this disease. It has been estimated that about one-third of civilized mankind are either actively tuberculous or harbor a latent tuberculosis in some organ or gland.

Under the general title of tuberculosis are included the various pulmonary forms, abdominal forms, tuberculosis of the bones, glands and other organs of the body. This is a disease of civilization and hence due to the congregation and crowding of mankind into small regions, as cities. Thousands of persons suffering from pulmonary tuberculosis are walking our streets and expectorating billions of tubercle bacilli daily.

The United States has a population of nearly 90,000,000 people; of these nearly 12,000,000 will die of tuberculosis in some form, and the majority of the latter number with pulmonary tuberculosis. The death-rate from this disease among the colored race is nearly twice that in the white. Or, put in another way, about one in every ten deaths of the white population and about one in every six deaths of the colored race is from tuberculosis.

A few years ago statistics showed that, in Europe, France, Austria and Russia led the death-rate from this disease; Switzerland, Belgium, Denmark, Norway and England did not suffer so extensively; while the death-rate in Germany held the intermediate ground.

A short time ago tuberculosis headed the death-list of ten principal cities of the United States. Now pneumonia has reached first place in some of these cities. In many cities the number of deaths from tuberculosis is much greater than that from all combined diseases that are called infectious, with the exception of pneumonia. To be exact, in 1907, the death-rate from tuberculosis per hundred thousand in the registration area of the United States was 183.6. This is a decrease from the year 1900, while still later statistics show a slight decline, because of a better understanding of the disease and better methods of treatment. Statistics[1] compiled by Frederick L. Hoffmann, on the basis that ten living persons have the disease to every death from it, indicate that there are probably 1,500,000 tuberculous patients in the United States.

PREVENTION

This being the problem, what has been accomplished in the few years since the medical and lay world have cooperated in preventive measures? Every large city, as well as every state, has shown a decrease in deaths from tuberculosis during the last decade. In some cities the lessened death-rate from the disease in wards or sections graphically and conclusively demonstrates what can be done by way of prevention. It has been estimated that in the last ten years about 200,000 less deaths from tuberculosis occurred in the United States than would have been estimated from the death-rate of the previous decade.

Hoffmann finds that the death-rate has diminished from 389.1 per hundred thousand of population in 1881 to 180.1 in 1912; that from 1881 to the present time the death-rate from tuberculosis in some states has been reduced nearly one-half, and also—an exceedingly interesting fact—that the fall in the death-rate of women in several eastern states has decreased more than that of men. This must show that the hygienic conditions of factories have not been improved so much as the hygiene of houses and tenements. On the other hand, the death-rate, from all causes, of women and girls in some cotton-mills is shown to be much greater than that of the men and boys employed there. Germany is probably now leading the world in advanced sanitation of factories and in the inducements offered to factory employees to take the sanatorium cure.

Hoffmann further states that the annual mortality from tuberculosis is now about 125,000, and the dreaded cancer causes about 75,000 deaths annually in the United States. All this goes to show that preventive medicine has continuous and progressive problems; as fewer babies and young children die of preventable diseases, including tuberculosis, more are dying from pneumonia, cancer and (early in the decades between 40 and 60) of cardiovascular-renal disease.

Hoffmann finds that the average age of death from tuberculosis of the lungs is 36 years, which emphasizes the facts that since consumption was first known, even back in the time of Hippocrates, young adults from 20 to 30 are the most susceptible to the disease, and that the greatest number of deaths occur between the ages of 15 and 40.

There can be no question that the lessened death-rate from tuberculosis is due to sanatoriums, isolation hospitals, out-door treatment, fresh air in sleeping-apartments, improved tenement-house laws and a better understanding by the public of what predisposes to the disease. As most deaths from tuberculosis occur in cities, the splendid work of municipal boards of health has been the principal cause of the decrease of this disease. Even the introduction of closed sewers as a factor in reducing tuberculosis should not be overlooked, says Irving Fisher,[2] in his national report. Also, the enormous value of certified, or at least pasteurized, milk in preventing tuberculosis among children should be repeatedly chronicled. As Nathan Straus and his able laboratory corps have shown, milk which has been both certified and properly pasteurized is still better.

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[1] Presented at the Ninth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis, Washington, D. C., May 9, 1913.

[2] Fisher, Irving: Bull. of the Committee of One Hundred, No. 30, July, 1909.

Open-air schools are active agents in preventing tuberculosis through the improvement in children who have a tuberculous taint and the better nutrition of debilitated and anemic children. The value of such schools in the prevention of tuberculosis should be universally known.

MEASURES THAT WILL CAUSE FURTHER DECREASE IN THIS DISEASE

These may be enumerated as, primarily:

1. General instruction in hygiene and in the conditions that predispose to this disease.
2. Tenement-house laws to prevent overcrowding.
3. Sunlight.
4. Open windows, verandas and roof-gardens.
5. Municipal breathing-spaces; parks, playgrounds, etc.
6. Proper ventilation of all churches, theaters, halls and assembly rooms.
7. Open-air schools, or open-window schools.
8. Laws prohibiting spitting on the streets and in buildings.
9. Better factory sanitation; better methods of cleaning public buildings and public conveyances.
10. Special laws against the dissemination of dust in factories, foundries and all occupations in which it may be inhaled.
11. Better hygiene and improved buildings for all general hospitals, prisons and jails.
12. Better laws for the more scientific control of tuberculous cattle, and compulsory cleaning and improving of all cow-barns and farms used for producing public milk-supplies.
13. Certification or pasteurization of all milk used for infant-feeding.

Personal preventive measures are:

1. Compulsory report of every case of tuberculosis.
2. Careful instruction of the family in the care of the tuberculous person, if he is to remain at home.
3. Careful personal instruction of the patient, if he is at an age to receive it, as to the possible methods of communicating the disease to others.
4. Sanatoriums for incipient cases of pulmonary tuberculosis.
5. Isolation hospitals for advanced tuberculosis patients whose home surroundings are inadequate.
6. Skilled dispensary care of ambulatory cases and visiting nurses for "follow-up" work.
7. Sanatoriums or rest-hospitals for joint and bone tuberculosis; these are of special value when located at the seaside. (The value in glandular tuberculosis of seaside sanatorium or veranda rest-cures should also be recognized.)
8. Careful instruction to reduce the morbid fear of other members of the family, and for the mental comfort and happiness of the patient. This should be given, both by the board of health and by the attending physician, to the effect that the disease is not contagious, and that if the instructions urged are properly carried out the probability of acquiring the disease from the patient is practically nil.

COMMUNICABILITY

We avoid the term "contagion" because it has caused such wide-spread, needless fear. Even the word "communicable" must be either modified or more carefully explained than it has been heretofore. We must now give more thorough instruction concerning the causes that predispose to the development and growth of the tubercle bacillus, which so frequently has long been resident in the patient himself and has not been acquired recently from any associate. The fact that there is a specific germ, which is often contained in the sputum and can be sprayed by careless coughing (it is estimated that a bad case of pulmonary tuberculosis can distribute seven billions of tubercle bacilli in twenty-four hours), has completely obscured the fact that such sputum in the vast majority of cases communicates the disease only to the young child playing on the floor in rooms occupied by a careless tuberculous patient.

Although there is no doubt that a house or building may frequently become infected, still the associates and attendants of a tuberculous patient do not frequently acquire the disease from him, and hence the phthisiophobia that is so rampant should be corrected for the sake of humanity and civilization. The sufferers from a disease that is so universal, latent perhaps in nearly one-third and perhaps active in nearly one-tenth of civilized mankind, must not be treated harshly by the nine-tenths of the people who are well. The persistent freedom from the disease shown by physicians and nurses who care for tuberculous patients in hospitals, the diminution of the tuberculosis death-rate in villages in which such hospitals are located, the infrequency with which a married man or woman acquires the disease from a wife or husband who suffers from it — all these facts, shown by statistics, prove that the disease cannot be termed contagious, and that its communication is, under ordinary sanitary conditions, not probable.

There is no longer a necessity, then, for the medical profession to emphasize the rôle of the tubercle bacillus; what should be emphasized and taught is the proper care of young children, and the fact that most tuberculosis has been acquired in childhood and only develops in the individual himself later. Laymen should understand the various causes for such a lighting up, or. development, of a latent tuberculosis. They should also be told that at least a third of all individuals in civilized communities, by the time they have reached adult life, have acquired and more or less successfully combated the germ of tuberculosis. Some able investigators even state that most adults have received some tuberculous infection.[3] After the public understands this and realizes that the majority of these persons are well and apparently non-tuberculous, it is then ready to be taught that the real danger of the development of tuberculosis lies in anemic and run-down conditions; in uncured influenza, bronchitis, pneumonia and pleurisy; in the irritation of inactive tuberculous foci by acute infections, as measles and whooping-cough; and in the debility that follows incomplete restoration to health after all acute infections. Such teaching will not only prevent phthisiophobia, but will also be a very great factor in preventing the development of tuberculosis.

On the other hand, statistics certainly show the danger of direct contagion in children, as it has been found that the mortality of children from tuberculosis is in inverse proportion to the length of time between their birth and the death of their infected parents, and in direct proportion to their nearness to the contagion. Thus, if they are removed from their infected parents, or from persons afflicted with the disease, they have more chance of recovery than if they remain in contact with such infection.

(To be continued)

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[3] Baldwin, E. R.: Bull. Johns Hopkins Hosp., 1913, xxiv, 220.

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SATURDAY, MARCH 14, 1914

AN EXPERIMENT WITH TUBERCULOSIS

The problems presented by the wide-spread existence of tuberculosis in dairy cattle are manifold. They bear on human experience in connection with the hygiene of the milk-supply, which is assuredly a matter of no small concern to all classes of society. The question of tuberculosis in cattle involves the economics of agriculture to a far greater degree than the uninitiated can appreciate; for the disease has manifested itself so very widely that the hope of complete eradication must be deferred for a long time, to say the least. Furthermore, the outcome of the management of tuberculous herds may point the way for advantageous applications in the field of human treatment or prophylaxis; so that there are lessons to be learned from work now being undertaken in many parts of the world.

We have no desire to rehearse at this time the debate as to the identity or diversity of human and bovine tuberculosis. In view of the important relation of cattle to man, it is significant that, from the point of view of public health, tuberculosis is probably the most notable and also the most prevalent disease of cows. For example, an expert in the government service, Dr. John R. Mohler, estimated a few years ago that probably 25 per cent. of all the cows which supply milk to the District of Columbia were tuberculous.

In view of the enormous practical difficulties in the way of the complete eradication of tuberculosis in cattle by the wholesale slaughter of all animals known to be infected with tuberculosis, schemes for utilizing the latter have been devised. The most prominent of these is the system whereby tuberculous cows are isolated and used for breeding purposes, the calves being removed from the mothers at the earliest moment and brought up without further exposure to the disease. This has been rendered possible by the finding that such young are *regularly born in perfect health, and entirely free from* tuberculosis. The affected breeding cattle in this way do not become an entire economic loss. A ten-year investigation, carefully verified and supervised by government officials, has just been reported by Brooks[1] in connection with what is probably one of the most valuable herds of Holstein-Friesian cattle in the world.

The object of the experiment, some of the incidents of which deserve to be quoted in considerable detail, has been to produce a herd of Holstein cattle entirely free from tuberculous taint and yet endowed with all the most valuable strain-characteristics possessed by this widely advertised breed of stock. Animals were selected because of their desirability from the standpoint of breeders and milkers or because of their "type," and entirely independent of the presence or absence of tuberculosis. The tuberculous animals greatly outnumbered the non-tuberculous and in most instances several generations of tuberculosis on both sides are known to have existed. Three hundred tuberculous animals were studied. The existence of tuberculosis was determined by the administration of treble the official dose of tuberculin, repeated in non-reacting animals three times at intervals of six months. All animals reacting to either test were removed at once to the tuberculous farm, the administration of which is entirely separate from that of the non-reacting herd. Little or no possibility of the transmission of infection from the tuberculous group to the healthy one exists.

In the management of this tuberculous herd, with few exceptions, tuberculous cows are bred to tuberculous bulls; the selection in any case is made for purposes of "type," and no account of the infection is taken so far as breeding is concerned. At birth the calves are immediately taken from the mother and no possible communication thenceforth exists between them, except that the calf is given by bottle one feeding of the first milk-secretion of the mother, removed by stripping and fed unsterilized. All subsequent feedings are made from a modified-milk formula, based on pasteurized milk collected indiscriminately from sound and tuberculous animals. The feedings are made directly after pasteurization and before the milk has been cooled; pasteurization is begun immediately after the milk has been collected and before it has lost its natural heat.

Of more than two hundred calves born of the tuberculous herd, not one has become tuberculous, although all have been tested three times by massive doses of tuberculin. Some evidence exists tending to indicate *that these animals are rather more resistant to tuberculosis than animals born of non-tuberculous parents. No falling off in type, in milk production or fertility is* present in these calves, no increase in death-rate exists among them as compared with the offspring of healthy cattle, no falling off in value takes place, and several of the most valuable cows and bulls in the world are of this ancestry. These facts remain constant even where at least three generations of known tuberculous parentage exist.

No tuberculous animals showing gross evidence of disease are kept; but so far as the other reactors are concerned, practically all the world-records as to fertility, milk and cream production are held by animals either themselves thus infected or the offspring of tuberculous ancestry. The world's record of milk production was made by a 7-year-old cow of this tuberculous group (Woodcrest Meta Vernon), herself also the descendant of three known tuberculous generations. This cow gave in 365 consecutive days a total of 28,436 pounds of milk, and during her five years of fecundity has given birth to five high-grade and perfect calves. A 23-month-old heifer of this group, sired and dammed by tuberculous animals, has beaten the world's record of milk production for this age by 4,000 pounds.

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[1] Brooks, H.: An Experimental Study of Heredity in Bovine Tuberculosis, Proc. Soc. Exper. Biol. and Med., 1914, xi, 50.

The lessons of this most interesting experiment, with an outcome that must be a matter of surprise to many who have looked on the bovine tuberculosis situation as almost hopeless, are such as to give food for reflection. Numerous suggestions of moment are self-evident, and a new outlook has been opened.

THE ETIOLOGY OF EPIDEMIC SEPTIC SORE THROAT

Three extensive outbreaks of septic sore throat in the past three years, in Boston, Chicago and Baltimore, respectively, have, more forcibly than anything else, directed attention to the epidemiology of the disease and occasioned a consideration of its relation to the public health. The facts in regard to these and similar epidemics have received detailed mention from time to time in THE JOURNAL,[1] and some of the statistical and laboratory data, such as the studies of Miller and Capps[2] and of Davis,[3] for example, have been presented. The relationship of the disease to the milk-supply has for some time been either suspected or confirmed. There has been a tendency, in the investigation of a number of epidemics, to conclude that the cause of the infection in septic sore throat is the streptococcus which is discharged from the inflamed udder of the dairy cow into the milk, through which it is transferred to the throats of milk-consumers.

The evidence for the foregoing theory of infection has hitherto been circumstantial rather than positive and direct. The outbreak of epidemic septic sore throat at Cortland and Homer in the state of New York, during April of last year, gave an opportunity to demonstrate the correctness of the commonly held view.[4] The incidence of the cases in this outbreak soon cast suspicion on the milk-supply from one dairy. Over 70 per cent. of the cases in each community occurred among the patrons of a dairyman who was the only dealer selling milk in both places, and who furnished less than 7 per cent. of the total milk-supply. Adjacent towns had no cases, and, further, they received no milk from the suspected dairy.

As the result of an inspection of the cattle belonging to this dairy, two cows which showed physical signs of udder inflamation were isolated from the main herd and the use of their milk was forbidden. For the first time in the history of the investigation of individual cows for the existence of udder inflammation, we are told, a centrifugal milk-clarifier was used. By means of this apparatus the milk of all animals in the herd involved was examined and the sediment easily secured. The quantitative results in the case of the two suspected animals alone furnished sufficient evidence, by contrast with the milk sediment of the rest of the herd, to point conclusively to their udders as affected; and the microscopic examinations showing the streptococci, bacilli and phagocyting white corpuscles discharged by the inflamed organ into the milk completed the proof.

Bacteriologic examination demonstrated that cultures from the throats of four patients contained streptococci apparently identical with strains of streptococci obtained from milk slime from the two cows suffering from garget. Cultures from the throats of eight other patients contained slightly varying streptococci of the same type. These organisms were further found to correspond to strains of streptococci previously isolated from cows of another herd known to be suffering from garget, and from the milk slime of a cow supposed to be normal but giving an abnormal amount of sediment.

Inasmuch as it is now generally held that the streptococcus is the chief etiologic factor in septic sore throat, the predominance of organisms of that type in the inflamed udders of garget cows has drawn attention to their possible significance, and has suggested the probable original source of the infection in man. We must not forget the possibility, however, that in addition to the primary infection of milk, pathogenic organisms may be accidentally introduced into it through its being handled by persons suffering from streptococcic infection.

A NEW DEPARTURE IN CLINICAL TEACHING

A few months ago[1] we announced a gift of $1,500,000 from the General Education Board to the Medical Department of Johns Hopkins University to endow clinical teaching. Word now comes that $750,000 from the same source has been given to the Medical Department of Washington University for a like purpose. Thus provision has been made for a practical trial of the plan in two institutions. The plan provides that the heads of the departments of medicine, surgery, pediatrics and, possibly later on, other clinical branches, shall give their undivided time to teaching and research, and retain no fees for consultations. If these all-time professors act as consultants in private cases, fees for such consultations are to be turned into the university treasury. So far as we are aware, this plan has never been tried anywhere, either in this country or abroad, and the result of the experiment will be watched with interest.

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[1] The Source of the Streptococci in Epidemic Sore Throat, editorial, THE JOURNAL A. M. A., Jan. 4, 1914, p. 51. Capps, Joseph A.: Epidemic Streptococcus Sore Throat—Its Symptoms, Origin and Transmission, ibid., Sept. 6, 1913, p. 723.

[2] Miller, J. L., and Capps, J. A.: Epidemic Sore Throat Due to Milk, THE JOURNAL A. M. A., April 13, 1912, p. 1111; The Chicago Epidemic of Streptococcus Sore Throat and Its Relation to the Milk-Supply, ibid., June 15, 1912, p. 1848.

[3] Davis, D. J., and Rosenow, E. C.: An Epidemic of Sore Throat Due to a Peculiar Streptococcus, THE JOURNAL A. M. A., March 16, 1912, p. 773. Davis, D. J.: Bacteriologic Study of Streptococcus in Milk in Relation to Epidemic Sore Throat, ibid., June 15, 1912, p. 1852.

[4] See North, C. E.; White, B., and Avery, O. T.: A Septic Sore Throat Epidemic in Cortland and Homer, N. Y., Jour. Infect. Dis., 1914, xiv, 124.

[1] Full-Time, Salaried Clinical Professors, Current Comment, THE JOURNAL A. M. A., Nov. 22, 1913, p. 1906.

That the teaching of the clinical branches must be put more nearly on the basis of the teaching of the fundamental subjects, and that full-time teachers must be assigned to these subjects, is becoming more or less generally recognized. It is believed, however, that a large number of men engaged in practice will also be needed to give part of their time to teaching and research, though the number will probably not be so large as at present. When, however, the question is raised as to the rank of the man who can be secured to give full time to the college work and receive no compensation outside of the salary, there is considerable difference of opinion. If a man of exceptional ability has worked his way to the head of a department, does he disqualify himself for the position if he declines to give up the emoluments of general practice? Will not the attempt to restrict great clinical teachers to a salary result in the medical schools being compelled to accept men of less commanding ability and power? If a great clinician is willing to give half or two-thirds of his time to research and instruction, but wishes to reserve two or three hours a day for consulting work for which he can readily secure large fees, is there any real advantage gained in compelling him to surrender these fees to the university?

An important economic problem is involved here which cannot at this time be discussed at length. It is important to say, however, that by placing the clinical chairs on a salaried basis it may become as difficult for the medical colleges to secure and retain the services of the best talent in the clinical departments as it is for our schools of technology and engineering to keep on their faculties the most skilled engineers, who are drawn away from teaching by the large emoluments offered by the commercial world. If the public service is of great value, are not the greater emoluments justifiable? Is it not the very experience these men gain in their public service which makes them so desirable on the faculties of the teaching institutions? It is an important question, therefore, whether it is best either for the public or for the college to restrict the work of these men.

It has been felt by some that it was unjust that the heads of departments in the fundamental medical sciences should receive very moderate salaries, while those in the clinical branches were able to earn much larger sums. Few would venture the opinion that the average professors of anatomy, physiology, pathology and the like are not men of as great capacity, of as notable attainments and as worthy of reward in every way as the average professors of medicine, surgery and other clinical branches. There is undoubtedly an inequity in such a condition, but here again an economic problem is involved. There are many occupations which call for great talents, but which bring small financial returns. The success and rewards for one's labor are not limited to the financial returns from that work. In spite, therefore, of the smaller incomes from some of these occupations, we still find men selecting them in preference to those producing greater financial returns. The remedy for inequity between the salaries of laboratory and clinical teachers does not lie in placing restrictions as to income about the clinical teachers, provided the work they do as teachers and investigators is entirely satisfactory. It lies rather in educating the university administrators and the state to appreciate more highly and reward more adequately the labor of teachers and investigators in any branch of learning.

A different plan, proposed by one of our leading educators, would place the principal burden of teaching in the clinical branches on the younger men, who would devote themselves for ten or fifteen years to teaching and research exclusively, at a modest but adequate and gradually increasing salary. The sum which it is proposed to pay to the clinical heads under the plan just discussed would support four or five men of this type. At the end of ten, twelve or fifteen years some of these men by reason of their exceptional opportunities would have gained the knowledge and experience which would prove their exceptional ability as teachers. The college would thereby be enabled to make the wisest choice of those to be granted professorships or to be placed at the head of the various clinical departments. For these younger men there would be a constant inducement to strive for the higher positions open to them. And whether they reached the desired goal or not, they would be prepared by a broader knowledge and experience to render a larger service to humanity as strong consulting practitioners, so that, as a rule, they could demand at once large fees, and in this way secure adequate reward for their years of service to education. They would still retain their connection with the medical schools, however, giving a large amount of their time to research and teaching, for a small compensation.

There are some who feel that the latter plan possesses many advantages: It secures the undivided time and energy of men for teaching and research in the most productive period of their lives, and it effects an ideal pension system, or rather makes unnecessary any pension system. It closely approximates the actual practice in the clinical departments of the German universities, where, as a rule, one contentedly serves an apprenticeship for many years at a meager salary because of the hope of a large reward in honor and financial return on attainment of a professorship, which rarely comes to a man in Germany under 45 or 50. A large part of the best research work, and by far the greater part of the teaching in the German medical schools, has always been done by the younger men of this type.

It is doubtless true, as Mr. Flexner has pointed out in his report on medical education in Europe, that the German system leaves much to be desired; but the method by which the younger men have been forced to serve long periods of apprenticeship is certainly not one of the faults of the German system.

It is to be hoped that this second plan will be put into operation in some of our American university medical schools, adequate endowment being provided for the employment of a large number of young men between the ages of 30 and 45 who will give their entire time to teaching and research during this active period of life. Such a pedagogic experiment would be one of great importance, and the results of the comparisons of the two methods after twenty or twenty-five years would be of the utmost value.

ADVERTISING BY PHYSICIANS

Following the midwinter Conference on Public Health, Legislation and Medical Education of the American Medical Association, held in Chicago, February 23 and 24, numerous news-items and editorial comments appeared in the public press regarding one of the papers presented at the Conference. The substance of the newspaper items was that the American Medical Association was considering the revision of its principles of ethics with a view to removing or modifying the restrictions placed on individual physicians as to personal advertising. Some of the reports stated that revision of the principles of ethics would be taken up at once, and that an overwhelming majority of members of the Association were in favor of such a change. So far as we know there is no intention or indication of any change in the position of the American Medical Association on this question; the reports in the newspapers were due to a misapprehension of the character of the paper in question and the intent of the writer.

The paper was an argument for a better understanding and closer cooperation between the medical profession as an organization and the newspaper publishers as a class. The author did not advocate or discuss the question of personal advertising on the part of physicians; the proposition set forth and defended in the paper and presented to the Conference was something entirely different from personal exploitation; it was a plea for closer cooperation between medical organizations and the press for the public good, and not for personal benefit. It suggested that the expert knowledge of the medical profession could be utilized by the public press in two ways: first, by the dissemination through the newspapers of scientific knowledge which would be of value to the public in preventing disease, and second, in placing at the disposal of those newspapers which desired it the expert knowledge of the medical profession in separating worthy and reputable from dishonest and disreputable institutions which might seek publicity through the newspapers.

Of these two important activities one has already been inaugurated by the American Medical Association, and the other is worthy of serious consideration. Neither of them, however, has the slightest bearing on the question of personal exploitation of physicians through newspaper advertising or by any other means. An honorable physician could not conscientiously advertise for personal business, for the same reason that the honorable minister and lawyer would not advertise. A professional man has no commodity to sell; his only assets are his scientific knowledge and his personal ability; and he who claims to possess greater knowledge or greater skill than his professional associates — whether physicians, preachers or lawyers — is an egotist, or worse, and forfeits the respect of both his professional brethren and his fellow citizens.

ARE PEPSIN AND RENNIN IDENTICAL?

Among all the various names of enzymes, or digestive ferments, which now enter into the vocabulary of the medical sciences none find application more frequently than the words pepsin and rennin. They are no novelties, even to the oldest practitioner; and they can be found in the service of the language of commerce and practical medicine alike. They have been currently pictured in the teaching of the day as initiating distinct phenomena: the rennin associated with the clotting of milk in solutions neutral or nearly so; and the pepsin effective in dissolving and digesting proteins in the presence of an acid.

The Swedish physiologic chemist Hammarsten and his followers have long emphasized the view that the digestion of protein and the rennet action are brought about by two different enzyme actions. They have succeeded by a variety of devices and procedures in preserving one of these characteristic behaviors under conditions where the other is lost or impaired; in other words, the zymologists have made attempts with more or less apparent success in supposedly separating the two enzymes from each other. Some time ago, however, the idea was advanced, in particular by Pawlow and his school, that pepsin and rennin are essentially identical. They base their conclusions primarily on the sweeping parallelism which is commonly observed between the proteolytic and the rennitic properties of the solutions containing the enzymes, and further on the great difficulty which is as a rule experienced in obtaining one of the manifestations without the possibility of the other.

These differences of view have been much discussed. It must be admitted that the unquestioned simultaneous occurrence in both the animal and the plant kingdoms of enzymes having a proteolytic and rennitic action strongly indicates, to put it mildly, an identity of both enzymes and enzyme actions, as well as the parallelism of the pepsin and rennin action. The crux of the controversy centers in the question whether or not the parallelism of phenomena is a proof of their identity. Obviously it is not. Nevertheless we believe that the evidence for the contention that the protein-digesting and the milk-curdling activities of extracts, like those of the stomach, are manifestations of one and the same agency is becoming more convincing as the known facts of these enzyme actions are being more critically reviewed. There is no difficulty to-day in looking on the clotting of milk by enzymes as a stage in the proteolysis of casein. It is now agreed that the first step in the action of rennin is a hydrolytic change resulting in a product which precipitates under appropriate conditions, thereby forming the curd. The clotting may therefore be looked on as a peculiarity of the specific protein of milk casein, rather than of the enzyme which acts on it. Certain it is that the older idea of the purposeful existence of rennin in the stomach must now be abandoned; for the proteolytic extracts of plants or animal tissues which never come into contact with milk in nature are almost invariably capable of curdling this fluid under suitable conditions.

It might seem like a purely academic discussion to decide whether the burden of further proof should be placed on those who maintain the duality (or plurality) of the enzymes, or on the growing group of investigators who defend the identity of them and in upholding this unitarian point of view likewise adopt the one of greatest simplicity.[1] Furthermore, so long as enzymes can be identified only by their actions, and the chemist is unable to prepare them in pure form or isolate them from the doubtless manifold substances which they accompany, proofs of identity will not be easy to furnish. There is, however, a practical aspect to the subject in the domain of clinical diagnosis. In certain procedures, such as the tests of gastric function, we are accustomed to search for the proteolytic enzyme of the stomach and estimate its relative abundance. If pepsin and rennin are identical and a chemical unit, it may prove far more simple to make a test of the milk-clotting power of gastric contents than to apply the somewhat more cumbersome current tests involving the solution of protein. Some clinical chemists have already adopted the obvious suggestion in routine gastric analysis. The innovation is, we believe, worthy of more detailed study.

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[1] We refer those who are interested in the details of the arguments to Hammersten's Text-Book of Physiological Chemistry, translated by Mandel, New York, 1911, p. 451; Fuld, E.: Zur Frage der Identität von Lab und Pepsin, Internat. Beitr. z. Path. u. Therap. d. Ernährungsstör., 1913, v, 104; von Fürth, O.: Probleme der physiologischen und pathologischen Chemie, 1913, ii, 30.

Current Comment

KEEPING ALIVE THE LOW-GRADE MEDICAL JOURNAL

The privately owned medical journal of the poorer class considers it a part of its principles of journalistic ethics to blackguard the American Medical Association and THE JOURNAL. Yet curiously enough, the Association and THE JOURNAL are largely responsible for the continued existence of these publications. Time was when the manufacturer of proprietary medicines assumed a haughty attitude toward the medical press. His advertising appropriation was distributed among medical journals only of the better class; the small journals were ignored. As the American Medical Association, through THE JOURNAL, began to make plain to the profession the inherent fraudulence of much of the proprietary medicine business, the manufacturers found their status changed. First they found the pages of THE JOURNAL of the American Medical Association closed to them; later the state journals refused to accept their advertising; then some of the higher-class independent journals no longer would tolerate them. As a result, the manufacturer of fraudulent proprietary medicines is in a position where he has to take whatever avenues of publicity he can get, and the low-grade medical journal has flourished accordingly. It is true, of course, that as the profession gradually learns the real character of this class of wares, even the most venal of medical journals will find it inadvisable to accept these advertisements. Then will the erstwhile "ethical proprietary" become openly — what it has always been secretly — a plain "patent medicine," and go frankly to the newspapers. Ultimately, of course, as the medical profession becomes fully awake to the evils of the proprietary medicine business, the fraudulent proprietary will go out of existence—and with it will go the low-grade medical journal. Is the attitude of a large portion of the medical press toward the American Medical Association to be attributed to a prophetic view taken by the publishers? The low-grade medical journal should look on THE JOURNAL'S propaganda for reform in the light of a meal-ticket—for the present.

THE ABSORPTION OF IRON FROM MINERAL WATERS

There is at present a reasonable degree of accord of opinion with respect to the behavior of compounds of iron in the body as well as the indications for their therapeutic use. The view is generally accepted that the customary mixed diet contains approximately the amount of iron necessary to cover the physiologic needs for this element occasioned by the inevitable wear and tear or natural disintegrative changes in the body-cells that require it. In certain conditions of disease, on the other hand, a deficit of iron may actually arise. As a rule, the administration of the element, in the various types of compounds in which it can be given, may serve a double purpose, namely, that of repairing the loss that perchance exists and likewise of stimulating certain physiologic functions, notably the performance of hemopoiesis. The old debate of organic versus inorganic iron has reached a tentative settlement. It must now be admitted that both forms of iron compounds can be absorbed and satisfactorily carry out the purposes for which they are ordinarily administered. In therapy to-day they have essentially the same standing. The path of absorption leads through the upper intestine into the circulation; and the excretion of iron is accomplished into the lower bowel. The kidneys take little or no part in the latter performance. Chalybeate waters have long been employed in medicine. They contain small amounts of ferrous sulphate or carbonate and they have obtained varied recognition for therapeutic potency, depending on the hitherto changing views as to the usefulness of inorganic salts of iron. Since the availability of the latter has been clearly established it is to be expected that iron-containing waters can perform the service of medicinal compounds of iron. The fundamental fact of the retention of the iron from them has lately been demonstrated by Bickel[1] for the chalybeate waters of certain Continental springs. They were administered to animals with fistulas of the small intestine which permitted the unabsorbed portions of fluids introduced into the alimentary tract to be collected again after traversing a portion of the upper intestine. Iron-containing water was found to yield the element to the gastro-intestinal tract until the mucosa was saturated, so to speak, with it; then no more iron was taken up until a period of rest had intervened. Practical therapy may thus be assured that iron salts are absorbed from natural waters in which they occur in sufficiently dilute solution; and there is no reason for supposing that these cannot facilitate hemopoiesis and hemoglobin formation, if there is a deficiency in the iron-containing component of the blood, precisely as medicinally administered iron may. They seem to possess no advantage, however, over the latter.

PUBLIC LAUNDRIES

"Cleanliness is next to godliness," and it is also a prerequisite for health. If a community recognizes a responsibility for maintaining health, it must recognize the obligation which lies on it to make provision for public decency. This is the keynote of an article printed in the series of "American City Pamphlets" by Donald B. Armstrong, superintendent of the Bureau of Public Health and Hygiene of the New York Society for Improving the Condition of the Poor. Armstrong says that many communities supply means for the cleansing of human bodies, but it is just as essential to health and decency that public facilities for clean laundry should be provided when private ones are lacking. Otherwise the tone of decency of the community is lowered. Expenditures usually understood as being for the benefit of the public health really mean as much for the promotion of public decency. Among the tenement dwellers of large American cities the facilities for washing clothes are decidedly meager, and the establishment of public laundries or wash-houses fashioned after the plan of those long in use in foreign cities is a present demand. There are about fifteen of these institutions in America, five of which are in Baltimore. Other cities which have found an urgent demand for them are Philadelphia, Buffalo and Elmira. Recently the committee of the bureau of which Armstrong is superintendent made an investigation of the necessity for wash-houses in New York, and the cost of their equipment, operation, etc. The investigation covered a population of about 400,000 in the poorer sections of New York, and it was found that from 30 to 45 per cent. of the families were without any washing facilities in the home, while no hot water except that heated in the apartment is provided in from 70 to 95 per cent. of the houses. Inquiry among 10,000 bathers at one of the municipal baths showed that the women were enthusiastically in favor of the establishment of public wash-houses, and many of the men promised to make use of such facilities. In Baltimore and Philadelphia special days are set aside for men, and there are many men who could use the facilities to advantage. Armstrong says that the educational value of the measure is important. The public wash-house finds its chief justification in the fact that it gives to the people an opportunity to appreciate the value to health and decency of being physically clean. Physical cleanliness enhances moral and spiritual tone, and leads to a demand for better housing and better household equipment, which in turn make for better health and for decency.

STYLE FOR BIBLIOGRAPHIC REFERENCES

Through a committee appointed a year ago, the associated medical press of Germany has just published a bibliographic style-book. The report suggests that the names of the most widely read weeklies be abbreviated to initials; thus, the *Münchener medizinische Wochenschrift* will be "M. m. W." This may be a welcome innovation to bibliographers and abstractors, but to those not working daily with bibliographic references the mere initials will perhaps be obscure. The report recommends that references shall specify, first, the volume, next the year, then the number of the issue, and finally the page. In writing figures, Arabic numerals are to be used exclusively, and the page number is to be preceded by the initial S. (Seite). The method, on the whole, seems somewhat clumsy in comparison with the style of the Surgeon-General's Index-Catalogue, which is followed with slight modification in The Journal. Thus, where the foreign style would be "96, 1902, No. 2, S. 50," that of the Surgeon-General's Index-Catalogue would be "1902, xcvi, 50." Obviously, the differences are the use of the roman numerals in the volume, the giving of the number and the use of the letter S. preceding the page number. For conciseness, the American method is evidently superior, but the use of the roman numerals is deprecated by many who work daily with questions of bibliography. Apparently we have *not* yet reached in either method a final point which cannot further be improved on.

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[1] Bickel, A.: Ueber einige physiologische Wirkungen der Quellen des Bades Pyrmont, Internat. Beitr. z. Path. u. Therap. d. Ernährungsstör., 1913, v, 88.

MINE SAFETY AND THE WORK OF THE BUREAU OF MINES

According to the report for the year 1913 of Director Holmes of the Bureau of Mines, during the few years since the beginning of mine-safety investigations there has been a marked increase in the general interest taken by miners, mine-owners and the general public in questions relating to mine safety, and a marked decrease in the number of fatalities and injuries notwithstanding the increase in the number of men employed in the mines. The bureau has endeavored to organize and lead in the movement for mine safety, and in addition to its investigations has disseminated a large amount of information on accident prevention. In this work it has had the cooperation of state officials as well as miners and mine-owners. The activity of the bureau has resulted in increased efforts on the part of mine laboratories and mining engineers to improve mine practice and better equip the mines with safety devices and rescue appliances. For instance, at present there are several thousand sets of rescue breathing apparatus in use, besides auxiliary equipment for fire-fighting. Rescue stations have been provided at which groups of men have been instructed in the use of apparatus and in mine-rescue work. This work is also conducted by private agencies and by the mine operators and the Red Cross; but the demands on the bureau for such instruction have not diminished. During the three years in which mine-rescue and first-aid work have been taught, 31,203 miners have been trained in the use of the necessary equipment and in methods. During 1913 over 46,000 persons (miners) visited the mine-rescue safety-cars and stations maintained by the bureau, nearly 33,000 miners attended the lectures, and more than 5,500 miners were given rescue or first-aid training.

Medical News

ILLINOIS

Personal.—Dr. Elmer L. Crouch has disposed of his interest in the Maplewood Sanitarium, Jacksonville, and will devote himself to the practice of internal medicine.——Dr. John H. Cory, Geneva, is critically ill at his home as a result of uremic poison.——Dr. Charles F. Reed, assistant superintendent of the Kankakee State Hospital, has been transferred to a similar position in the Chicago State Hospital.——Dr. Ralph T. Hinton, Elgin, assumed charge of the Peoria State Hospital, March 1.——Dr. Henry J. Gahagan, Elgin, took charge of the Elgin State Hospital, March 1.——Dr. Eugen Cohn, assistant superintendent of the Peoria State Hospital, has been transferred to a similar position at the Kankakee State Hospital.——Dr. William T. Kirby is reported to be seriously ill in the Wesley Hospital.

Chicago

Medical Alumnae Dinner.—The annual banquet and reunion of the alumnae and former faculty members of the Northwestern University Women's Medical College was held at the Hamilton Club March 12.

Ambulance Surgeons to Have Motorcycles.—The motorcycle for ambulance surgeons will be in operation April 1. Twelve motorcycles are to be employed, each including a side car. These are to be used by ambulance physicians in responding to emergency calls.

Low Mortality.—Owing to the unusually mild winter noted in January and February, the mortality for Chicago has been reduced 7.5 per cent. During these two months there has been a marked reduction of the prevalence of disease and mortality among children. There were 275 fewer deaths from scarlet fever, 91 fewer deaths from diphtheria, 76 fewer deaths from measles. There were 237 fewer deaths among children between the ages of 1 and 5 years, and 104 fewer deaths among children from 5 to 10 years old. Another notable reduction was that of 140 deaths from pneumonia.

MAINE

Personal.—Dr. Alexander C. Hagerthy was elected mayor of Ellsworth, March 2; this is his fifth term as chief executive.——Dr. Robert J. Wiseman was elected mayor of Lewiston, March 1.——Dr. Anna L. Wilson, recently a member of the staff of the State Hospital, Augusta, has accepted a position in Washington, D. C.

New Officers.—York County Medical Society at Biddeford: president, Dr. Joseph W. Gordon, Ogunquit; secretary, Dr. Arthur L. Jones, Old Orchard.——Androscoggin County Medical Society at Lewiston: president, Dr. John A. Donovan; secretary-treasurer, Dr. Samuel E. Sawyer, both of Lewiston (reelected).——Kennebec County Medical Association at Augusta: president, Dr. Wellington Johnson; secretary, Dr. Henry W. Miller, both of Augusta.——Cumberland County Medical Society at Portland: president, Dr. Bertrand F. Dunn; secretary, Dr. Adam P. Leighton, both of Portland.

Medical Societies Protest.—At the January meeting of the Penobscot County Medical Society, January 23, resolutions were adopted strongly condemning the treatment accorded Dr. Henry W. Miller, late superintendent of the Augusta State Hospital, by Governor Haines, and approving the stand taken in this matter by Dr. Seth C. Gordon, Portland.——At the December meeting of the Cumberland County Medical Society, a resolution was unanimously adopted declaring that the attack made on Dr. Miller of the Augusta State Hospital was unwarrantable, and deprecating any change in the management of the institution.

MARYLAND

New Officers.—Prince George's County Medical Society, January 10: president, Dr. H. B. McDonnell, College Park; secretary, Dr. Samuel M. McMillan, Riverdale.

Appointments to Sydenham.—The following appointments were made by Health Commissioner Nathan R. Gorter, Baltimore, to Sydenham Hospital for Contagious Diseases: superintendent, Dr. John F. Hogan, Baltimore, to succeed Dr. T. S. Nicholson; assistant superintendent, Dr. Walter W. Point, Jr., and state laboratory assistant, Dr. Claude Van Bibber.

Personal.—Surgeon Lunsford D. Fricks, U. S. P. H. S., spoke before the Franklin Square Medical Society on "The Rocky Mountain Spotted Fever."——Dr. Martin F. Sloan, superintendent of the Eudowood Sanatorium, has returned to Towson after three months leave of absence, which he spent at the U. S. P. H. S. Sanatorium, Fort Stanton, N. M. He was in charge of a department there for three months to administer a special form of treatment.——Dr. Howard A. Kelly, Baltimore, has returned from Europe.——Dr. Lee Cohen, Baltimore, had a narrow escape from injury, March 6, when his automobile was struck by two cars.

Small-Pox in Baltimore.—Every day brings forth several new cases of small-pox. There are now over 80 cases at quarantine, and this has necessitated the employment of additional physicians, nurses and attendants at the Quarantine Station. Several cases have occurred in the large apartment houses, both among the white and the colored. It has been found that all of the cases occur among people who were not vaccinated. Vaccination is compulsory under the laws of the state, but in spite of the efforts of the health department to have every man, woman and child vaccinated, new cases of the disease are cropping out every day. There is an ordinance pending before the city council which provides that all persons, when requested by the health wardens, must submit to an examination to determine whether they have been properly vaccinated or not.

Alien Insane a Burden.—Dr. Hugh H. Young, president of the State Lunacy Commission, and Dr. Arthur P. Herring, secretary, both of Baltimore, represented Maryland in the delegation that appeared before the United States Senate committee which has the immigration bill in charge. One of the principal things that the Maryland delegation asked for was the appointment at this port of an alienist. At the present time 10 per cent. of the insane patients cared for by this state are aliens, and the greater proportion of these incompetents would not have been a burden on the state if there had been adequate examination of their mental capacity at the time they entered this country. When the new immigration station is completed there will be a great increase in the number of foreigners entering through this port and the number of insane on the state's hands will also increase.

MASSACHUSETTS

Personal.—Dr. Henry R. Stedman, Brookline, has been appointed a trustee of the Taunton State Hospital.——The apartments of Drs. F. M. Johnson and H. A. Souther, Boston, were seriously damaged by fire, February 25.

Fisherman's Hospital Ships Apparently Assured.—The delegation from Gloucester, which went to Washington to interest the President, the Secretary of State, and the Secretary of the Navy in the establishment of government hospital ships for the fisheries of the North Atlantic coast have returned, having received much encouragement. It is suggested that a revenue cutter be utilized for hospital purposes, which could carry two surgeons, and that this could be done with little addition to the ordinary maintenance expenses.

Cutter Lectures.—The series of Cutter Lectures on preventive medicine and hygiene, given under the terms of the will of John Clarence Cutter, which provided that the lectures shall be given in Boston, and shall be delivered free to the medical profession and the press, will be given in the amphitheater of the Harvard Medical School at 5 p. m. as follows: Dr. Charles V. Chapin, superintendent of health, Providence, R. I., March 20, on "Science and Sanitation"; March 27, "Efficiency of Public Health Measures"; April 2, "Organization of the Health Department"; April 9, "Research and Publicity"; April 16, "Nuisance Problems," and April 30, "Contagious Disease Problems"; Dr. Cressy L. Wilbur, chief statistician, Bureau of Census, Department of Commerce, Washington, D. C., will lecture on "Vital Statistics in Massachusetts and the United States," May 26.

MICHIGAN

Detroit Pediatric Society.—January 28, the Detroit Pediatric Society was organized with the following officers: president, Dr. Thomas B. Cooley; vice-president, Dr. Herbert M. Rich, and secretary-treasurer, Dr. Francis Duffield. The membership will be active, associate and honorary. The active membership will be limited to twenty and it is desired to have associate members throughout the state.

Personal.—Dr. Herman Ostrander has resigned as president of the Kalamazoo Anti-Tuberculosis Society.——Dr. Joseph W. Tomlinson, Melvin, fractured his leg recently when his horse reared and fell on him.——Dr. Edward M. Auer, Kalamazoo, and Dr. and Mrs. Frank J. Gibson and Dr. and Mrs. George E. Winter, Jackson, have sailed for Europe.——Dr. Seymour M. Cornell, Bronson, is reported to be ill at his home.

MISSOURI

Personal.—Dr. Daniel F. Bell, Marshall, who has been seriously ill, is reported to be improving.——Dr. J. Scott Snider, Kansas City, who was seriously injured in an automobile accident, February 19, is reported to be improving.——Dr. James E. Calloway, Ravanna, has retired from practice, and has started for his new home in Portland, Ore.——The house of Dr. Morgan L. Clint, Meadville, was seriously damaged by fire, February 12.

County Society Adopts Pledge.—Jackson County Medical Society recently adopted the following pledge and requested all members to sign it. All new members will be required to sign it before being admitted:

"Recognizing that Jackson County Medical Society seeks to develop, exemplify and enforce the highest traditions of our calling, I hereby pledge myself, as a condition of membership in the society, to live in strict accordance with all its principles, declarations and regulations. In particular I pledge myself to pursue the practice of our profession with thorough self-restraint and to place the welfare of my patients above all else; to advance constantly in knowledge by the study of professional literature, the instruction of eminent teachers, interchange of opinion among associates, and attendance on the important societies and clinics; to regard scrupulously the interest of my professional brothers and seek their council when in doubt of my own judgment; to render willing help to my colleagues and to give freely of my services to the needy. Moreover, I pledge myself, so far as I am able, to avoid the sins of selfishness; to shun unwarranted publicity; dishonest money-seeking and commercialism as disgraceful to our profession; to refuse utterly all secret money trades with consultants and practitioners; and, when acting as consultant, to teach the patient his financial duty to the physician and to urge the practitioner to obtain his reward from the patient openly; to make my fees commensurate with the service rendered and with the patient's rights; and to avoid discrediting my associates by taking unwarranted compensation. Finally, I pledge myself to cooperate in advancing and extending, by every lawful means within my power, the influence of the Jackson County Medical Society."

St. Louis

Open-Air School.—An open-air school to cost about $35,000 is to be erected on Grand Avenue by the Board of Education. The plans provide for shower-baths, kitchen, dressing-rooms and sleeping-porches.

Milk Bill Passed.—A new ordinance controlling the milk-supply passed the general assembly without a dissenting vote. It is said this is one of the most comprehensive bills governing milk-supply in any of the large cities. It goes into effect immediately.

Cottages to be Built at Once.—After a conference with the mayor and the hospital board, the comptroller has appropriated the necessary funds to build cottages costing $600 each, sufficient to care for forty patients, now being treated in the City Hospital.

Campaign to Raise $300,000.—Mount St. Rose Hospital has begun an active campaign for raising $300,000 by popular subscription to increase its facilities for the care of consumptives. At present the institution is unable to meet the demands made on it.

Plans for Hospital Accepted.—Plans for the $700,000 infectious disease hospital have been accepted and work on two of the buildings will begin about May 1. These two buildings will be completed early in the winter. The entire group will be composed of eight buildings.

Personal.—Dr. Sherwood Moore has gone to West Africa for an indefinite period, where he will study tropical diseases.——Dr. Lionel S. Luton and Dr. Harriet H. Stevens, accompanied by Dr. Stevens' mother, departed for a six months' stay in Europe.——Dr. Ralph W. Mills has returned from abroad.

Physical Education Association to Meet.—The therapeutic section of the American Physical Education Association will hold its annual session in St. Louis, April 1-4. The St. Louis public schools will exhibit the work of the pupils. Baroness Rose Posse, president of the Posse Normal School of Gymnastics, Boston, will be one of the speakers at the women's section.

NEW JERSEY

Hospital Stormbound.—On March 3, efforts were made to send provisions to the Municipal Tuberculosis Hospital, near Trenton, which had been stormbound and had received no food supply for twenty-four hours.

Personal.—Dr. Virgil D. Marcy, Jr., president of the Cape May city council, who has been ill from overwork, has taken a trip to the Canal Zone for recuperation.——Dr. Edward Mulvany, Jersey City, has had the middle finger of his left hand amputated on account of malignant disease due to Roentgen-ray burns.

Foods and Drugs Inspection During February.—The Division of Foods and Drugs of the State Board of Health during February examined 589 samples of food and drugs. The drugs were mostly of the condiment variety used in the household, and also some household remedies. The foods consisted chiefly of such articles as canned cherries, pickles of various kinds, sausage, oleomargarine, raisins, etc. Of the 589 samples, 501 were found to be above standard, and only 88 below. Eight suits were brought on account of sophisticated foods and drugs. Of the drugs, it is interesting to note that of 9 samples of aspirin, all were found to be below standard; of 21 samples of tincture of iodin 14 were found below standard, and of 17 samples of hydrogen peroxid 10 were found below standard.

NEW YORK

New York City

Harvey Society Lecture.—The tenth Harvey Society Lecture delivered on March 14 by Dr. W. T. Halsted, Johns Hopkins University, is on "The Significance of the Thymus Gland in Graves' Disease."

Spinal Meningitis on Steamer.—The Greek steamship *Athinai*, which arrived in this port February 28 from the Levant, had on board three cases of spinal meningitis. Since the ship has been detained in quarantine, a fourth case has developed.

Motor Ambulances for City.—Automobile ambulances are to supplant horse-drawn ambulances in all the institutions in the city under the jurisdiction of the Health Department. Orders have been given for three ambulances and others will be purchased as soon as possible.

Personal.—In celebration of the completion of twenty years of continuous service as medical officer of the New York Fire Department, Dr. William A. De Long was given a dinner in

New York by the board of medical officers. Dr. Joseph E. Smith, Brooklyn, chief medical officer, presented Dr. De Long with a gold fire-badge, studded with diamonds, and suitably inscribed.

Protest Against Milk Commission.—A protest has been sent to Governor Glynn by the New York Milk Committee against the commission appointed on January 22. The protest asserts that seven out of the eleven members represent the interests of the milk dealers and manufacturers of ice cream, and are opposed to regulations for the protection of the consumer. The New York Milk Committee claims that the attitude of the commission as shown at a meeting recently, was prejudiced. The Milk Committee has produced the detailed evidence of their reasons for complaint.

Increased Issue of Health Bulletin.—Health Commissioner Sigismund S. Goldwater announces that beginning with the present issue the Department will send its *Weekly Bulletin* to 10,000 citizens, including every physician in New York City. Hitherto only 2,000 copies were printed. A list of the names of violators of the food laws will be published providing the public with information about the practices of certain food dealers. Quarterly reports of health activities will be published and tables for each quarter will be repeated for comparison. Suggestions for the *Bulletin* will be welcomed.

Clinical Study in New York.—The Society for the Advancement of Clinical Study in New York, which was organized in 1912 and which established a Bureau of Clinical Information, is now issuing a daily bulletin of operations, which it sends each evening to all regular reporting hospitals. It recently issued a booklet containing a list of the surgical clinics in New York and Brooklyn from November, 1913, to June, 1914. Dr. Charles N. Dowd is president, and Dr. George Gray Ward, Jr., secretary-treasurer of the organization.

Disease Among Bakers.—In accordance with the law requiring the examination of bakers, the employees of the National Biscuit Company, numbering over 3,500, have recently been examined by the medical officer of the company in cooperation with the Department of Health. A remarkably small amount of disease was disclosed. The examination was made with special reference to tuberculosis. No cases of positive tuberculosis and only ten suspicious cases were found. There were only two cases of syphilis. The report was most encouraging as giving evidence of the growing appreciation by large employers of labor of the importance of systematic examination of their employees.

Work of Academy Committee.—An announcement to the Fellows of the Academy of Medicine calls attention to the work of the Committee on Public Health, Hospitals and Budget which investigates matters on its own initiative and serves as a source of information to organizations of citizens and the departments of the city government which are concerned with the public health. As the work of this committee at times becomes very onerous and as there are many Fellows ready and willing to help in any work for which they are especially fitted, it is suggested that those Fellows who are willing to be called on by the committee to take up matters on request as the need arises, should send their names to the secretary, Dr. James Alexander Miller, with an indication of the kind of public health activity with which they would wish to be associated.

OHIO

Personal.—Dr. Alvin L. Light has been appointed Commissioner of Health of Dayton.——Drs. Lewis A. Buchman, Grover C. Goudy, George F. Zinninger, J. Frank Kahler, and Clare E. Fraunfelter have been appointed by the Canton Medical Society a milk commission to supervise the distribution of milk to infants and sick persons.——Dr. Sidney McCurdy has been appointed chief surgeon of the Youngstown Sheet and Tube Company.

Antivaccination Movement.—The antivaccination movement has shown itself in various parts of the state. A hard blow was struck at this organization in Toledo, when general vaccination was brought about by the action of the local board of health, the Retail Merchants' Board and the Toledo Commercial Club. In Delphos, Dayton and many smaller cities and villages the antivaccination movement continues, and is a handicap to the prevention of small-pox and a curse to the business interests of the community. The agitation is largely based on false and malicious perversion of statistics and barefaced lies. Vaccination seems to be the exception to the rule that experience is the best teacher. The lesson of 1902-3 in Ohio seems to have been forgotten.

Internal Vaccination.—In compliance with the request of the State Board of Health students of Ohio State University were required to present evidences of recent and successful vaccination before being allowed to register. It developed that in some cases the so-called "internal" method had been used. The production of an immunity by feeding is a practical impossibility, and one would expect physicians of this day and age to recognize the futility of such a procedure. One could hardly suggest that the question of profit enters into the question. An analysis of some of the tablets used for this purpose is now being made, and an attempt will be made to prevent the repetition of such a fraud which is all too common and dangerous, in that it gives the victim a sense of false security.

Small-Pox Reports.—During January more than 850 cases of small-pox were reported to the State Board of Health. The northwestern and southeastern portions of the state have suffered the most. Factors which have operated to increase the spread are the extreme mildness of the cases, the fact that vaccination has not been generally enforced in Ohio since 1903, and the inefficiency of certain local health organizations. There have been several cases thought to have had "variola sine eruptione," and one in which only eight scattered pustules could be found. February reports do not indicate much decrease in the number of cases reported. The various local health organizations are being urged to take every precaution; and inspectors of the State Board of Health are advising with health officers of villages and townships whenever occasion demands. Only four deaths were reported in January from small-pox. This illustrates better than any description the mild nature of the disease.

Public Health Exhibit.—The Public Health Exhibit of the State Board of Health has just completed a most successful campaign at Zanesville. The attendance was large and particular interest was shown in those parts of the exhibit devoted to water-supplies There were six lectures, each one dealing with a special phase of health work. The Muskingum County Medical Society adjourned their meeting on February 11 to attend one of the public health lectures in a body. The water-supply of Zanesville is drawn from the Muskingum River and its impurity is well illustrated by the typhoid rate, nearly the highest in the state. A desire on the part of citizens for information concerning water-supplies was plainly apparent, and it was satisfied as completely as possible by the lectures. The exhibit is now in Coshocton. The campaign of public health education is meeting with even a greater measure of success than was expected, and the exhibit and lecture course particularly have given rise to much favorable comment. Constructive criticisms and experience have caused many modifications and improvements in the exhibit, and the lectures are modified to suit the needs of each city visited. Following the campaign in each city it is planned to organize the public health forces so as to continue the work started by the exhibit.

Cincinnati

New Officers.—Cincinnati University Medical Society: president, Dr. Howard L. Schriver; secretary, Dr. Joseph M. Topmoeller.

Society Disbands.—On February 9 a meeting of the Cincinnati Medical Library Association was held, its object being to conclude the affairs of the association and to disband. The funds on hand, amounting to $293.78, were turned over to the Dandridge Memorial Library Fund of the Medical Department of the University of Cincinnati.

Opposition to New Sewer System.—Considerable opposition has been expressed with regard to the plans for the new sewer system now under construction in Cincinnati. Many feel that the Ohio River should be purified rather than undergo further contamination. The question was very thoroughly discussed at the meeting of the Medico-Civics Association, following a paper on the subject by Mr. John W. Hill, a very eminent engineer.

Management of City Hospital.—Now that the building and equipment of the new City Hospital is no longer a subject for discussion, all diversity of opinion has centered on its management or control, and numerous solutions to this complex problems are being advanced not only by members of the medical profession, but by the lay public as well. Several meetings of the Charter Commission have been held, when prominent citizens from the business, industrial, professional and political world have entered into animated discussions. The question was very thoroughly discussed at the Academy of Medicine, February 22, following a paper read by Dr. Otto P. Geier, his subject being "The Control of Public Hospital in Relation to Welfare Work Under the New Charter." Some favored a board of control to be made up largely of city officials with a very meager representation from the medical profession. Others feel that the hospital should be more closely affiliated with the Medical School of the University of Cincinnati, serving a two-fold purpose by being of value in an educational as well as a charitable way to the city.

OREGON

Hutchinson in Portland.—Dr. Woods Hutchinson was the guest of honor at a banquet given by the members of the Portland profession at the Portland Hotel, March 1.

New Officers.—Baker County Medical Society at Baker, February 25: president, Dr. Clifton L. Blakely; secretary, Dr. Claude M. Pearce, both of Baker.——Portland Academy of Medicine: president Dr. Andrew C. Smith; secretary, Dr. Noble Wiley Jones.

Personal.—*Dr. J. Christopher O'Day, Portland, has been* appointed demonstrator of anatomy at the North Pacific School of Dentistry and Pharmacy, and chairman of the Department of Public Health of the Conservation Association.——Dr. Ralph C. Matson, Portland, has gone to India to study the prevention and treatment of tuberculosis.

PENNSYLVANIA

Scarlet Fever at State Hospital.—The Norristown State Hospital for the Insane is closed to all visitors for twenty-one days as five cases of scarlet fever have developed there. The doctors of the institution have asked for an isolation building many times, but the legislature has never provided sufficient funds. However, strict precautions are being taken to prevent the spread of infection.

Chiropractors Refused Charter.—Justice Potter of the supreme court of Pennsylvania recently handed down a decision affirming an order of the common pleas court of Pittsburgh denying a charter to an organization known as the Chiropractors' Association of Pennsylvania. The refusal of the charter was based on the ground that the applicant had no legal status under the medical practice act.

Health Lectures.—The third of the series of health lectures under the auspices of the Allegheny County Medical Society was delivered in the East Liberty Young Men's Christian Association, March 10, by Dr. I. Hope Alexander of Pittsburgh on "Tuberculosis—Its Prevention and Cure," illustrated by stereopticon views. The fourth lecture in the series will be *delivered March 17 by Dr. James O. Wallace, Pittsburgh,* on "Posture and Its Relation to Efficiency."

To License Midwives.—The Bureau of Medical Education and Licensure, on January 31, appointed a committee, consisting of Drs. John M. Baldy, Philadelphia, Adolph Koenig and Daniel P. Maddux, Chester, to arrange for the examination and licensing of midwives under the act of 1913. Examinations will be held at the several state tuberculosis dispensaries. The work will be in charge of the health department officials in each district, and the dispensary chiefs will communicate with midwives in their districts and fix the time and place for examinations.

Philadelphia

Night Clinics.—On March 3, the Jewish Consumptive Institute, 406 Wharton Street, started night clinics for such persons as were unable to attend those in the day time.

Personal.—Dr. Peter H. Lane is in the Chestnut Hill Hospital suffering from a broken leg caused by a fall on an icy pavement.——Dr. Ellwood R. Kirby is seriously ill as the result of infection received in an operation.

Extensive Vaccination.—Since February 11, ten quarantines for small-pox have been established and more than 15,000 persons *vaccinated, which has cost the city $675.* At present there are nine cases, all directly contracted from a man who came to this city from Baltimore.

Graduate, Not Grand Council.—Dr. Clara Marshall, dean of the Women's Medical College of Pennsylvania, Philadelphia, calls attention to an error in THE JOURNAL for February 28, page 709, regarding the organization of the medical college alumnae. She states that a graduate council was formed, not a grand council, as therein stated.

Visiting Nurses' Society Report.—The twenty-eighth annual meeting of the Visiting Nurses' Society of Philadelphia was held at the central office of the society, March 5. This society employs none but graduate nurses and now has a staff of forty-two. During the past year 10,761 patients were treated and 104,132 visits were made. A nurse has recently been placed at Ardmore, giving the society supervision over the district along the Main Line from Overbrook to Paoli.

SOUTH DAKOTA

Personal.—*Dr. Edward C. Day, Platte, accidentally shot* himself at the Chamberlain Sanatorium, February 24.——Dr. Stanley A Milligan, first assistant surgeon at the Battle Mountain Sanatorium, has been transferred to Hampton, Va.——Dr. Denton W. Rudgers, Yankton, who is to leave for California soon, was given a farewell banquet by the members *of the First District Medical Society.*

Health Superintendents Form Organization.—At a meeting of the county superintendents of Health held in Pierre, January 12, in connection with the regular meeting of the State Board of Health and Board of Medical Examiners, a permanent organization of superintendents of County Boards of Health was formed The following officers were elected: president, Dr. Edson C. Miller, Brookings; vice-president, Dr. John L. Foxton, Huron, and secretary, Dr. Herman J. G. Koobs, Scotland

New Officers.—Fourth District Medical Association at Pierre: president, Dr. Theodore F. Riggs, Pierre; secretary-treasurer, Dr. Bertrand M. Hart, Blunt.——Physicians' and Surgeons' Association incorporated at Mitchell, with a capital of $25,000 by Drs. Ellsworth E. King, Mitchell; Creighton P. Farnsworth, Chamberlain; Charles A. Bower, Mitchell, and W. F. De Laney.——Aberdeen District Medical Society at Aberdeen, January 27: president, Dr. Frank Miller; secretary, Dr. William D. Farrell, both of Aberdeen.

WISCONSIN

Maternity Hospital Opens.—The new Maternity Hospital, Milwaukee, which was established on the site of the old Plankinton residence at Sixteenth and Grand Avenues, was formally opened with a reception, February 23.

Societies May Consolidate.—At a special meeting of the Wood County Medical Society held at Marshfield, recently, it was voted to extend an invitation to the Clark County Medical Society to consolidate with the Wood County organization.

Personal.—Fire in the house of Dr. William H. Linke, Milwaukee, did damage to the extent of $1,000.——The house of Dr. Robert M. I. Kinnear, La Crosse, was destroyed by fire, February 23, with a loss of $6,000.——Dr. Joseph Schneider, Milwaukee, has been given a gold medal of honor by the University of Wurzburg.

Sanatorium Notes.—The Tuberculosis Sanatorium of Brown County is to be built on a tract of 26 acres, which was formerly a part of the historic Eleazer Williams grant. The site was acquired at a cost of $3,000, and $22,000 of the *appropriation remains available for the erection of the sanatorium.*——Health Commissioner Frederick A. Kraft, Milwaukee, has approved the plans of a corrugated iron cottage, 20 by 60 feet, to cost $850, to take the place of the building recently destroyed by fire. At the completion of the building, the city can care for thirty patients.

GENERAL

Deaths from Neosalvarsan in Los Angeles.—The newspapers having reported a number of deaths in Los Angeles from neosalvarsan, we telegraphed our correspondent in that city asking for full particulars. He replied that seven deaths had occurred in the hospital within two days following injection, and that another patient was likely to die; that two theories had been advanced regarding the cause of these deaths: (1) That the ampule which was used and which was covered by paper may have been cracked, and this crack being covered by paper not observed, so that the neosalvarsan was open to oxidation, and thus became changed; (2) that the syringe may have been defective, and this gave rise to changes in the solution; that the remaining ampules of neosalvarsan have been analyzed and are stated to be in good condition. An autopsy report of one of the cases was made by Dr. Stanley P. Black, which showed a somewhat congested spinal cord with marked distention of the blood-vessels and softening of the posterior columns. "Anatomic diagnosis: syphilis of the lung and liver, beginning pneumonia of the right and left lung, pyelonephrosis of the right kidney, irritation, possibly inflammation of the posterior columns of the spinal cord. From the autopsy findings and the clinical history it was concluded that the cause of death was an irritation of the spinal cord as the result of the injection of neosalvarsan intraspinally." The statement of Dr. A. T. Charlton, who treated the patients, is as follows:

"I first drew off a small quantity of blood from each patient and then removed the clot, leaving a serum with which I mixed a salt solution and the two tubes of neosalvarsan. I then heated mildly and placed in hermetically sealed tubes and placed on ice for twenty-four hours. After another twenty-four hours it was administered in graduated syringe, some of the patients receiving a greater dosage than others. Harry Lane, the surviving patient, received the first and largest amount of the injection. All injections were intraspinally."

The method of preparing the neosalvarsan and serum is not the Swift and Ellis method, in which the neosalvarsan is injected intravenously and the blood withdrawn after an hour, defibrinated and the serum containing neosalvarsan used for intraspinous injection. In this instance, it seems that the neosalvarsan was added to the serums after withdrawal, together with salt solution, the mixture heated and put away on ice and injected the following day. The coroner has stated that he will turn over all his information to the district attorney with a recommendation for the grand jury investigation.

Colleges Given Higher Rating.—At the meeting of the Council on Medical Education of the American Medical Association, held in Chicago, February 24, the following colleges were given higher ratings: The University of Pittsburgh, School of Medicine; Jefferson Medical College, and the Starling-Ohio Medical College (now the College of Medicine of the Ohio State University) were raised from Class A to Class A+. The Atlanta Medical College, Atlanta, Ga., and the Fordham University, School of Medicine, New York City, were raised from Class B to Class A.

Bequests and Donations.—The following bequests and donations have recently been announced:

Episcopal Hospital, Philadelphia, $5,000 by the will of Countess Galli.

Children's Hospital, Philadelphia, $5,000, Wilkes-Barre, Pa., Hospital, $10,000 by the will of Charles E. Dana, Philadelphia.

Allentown, Pa., Hospital, a donation of $30,000 for the construction of an operating room, from Dr. Charles D. Schaeffer.

Maternity Hospital and Howard Hospital for Incurables, Philadelphia, each $5,000, by the will of Joseph Wright.

Boston Lying-In Hospital, $5,000, in memory of Dr. William L. Richardson; St. Luke's Hospital, New Bedford, $50,000, by the will of Mrs. Hannah Bourne Abbe, New Bedford.

Quacks Collecting "Evidence"?—Letters have been received from two different localities describing briefly what seems to be an attempt on the part of quacks to obtain evidence of a damaging nature against reputable physicians. A man, giving various names, calls at physicians' offices and, in some of the cases, applies for a clean bill of health on the ground that he is about to be married. To these physicians he says he has never had any venereal disease. In other cases he informs the physicians that he is suffering from a gonorrheal infection and desires treatment. In each case he asks either for a signed report or for a prescription, as the case may be, and in each case, on paying the bill he requires a receipt. These letters, taken in connection with that published in The Journal, February 28, page 716, are significant.

Cooperation of State Board and State University.—The offices of the State Board of Health as already announced, have been moved from the Hartman Building which they formerly occupied, to Page Hall at the Ohio State University. This movement is part of Secretary and Executive Officer Dr. Eugene F. McCampbell's general plan to increase the utility of both the board of health and the university and to unite the two in a closer cooperation. The value to be derived from such a union is indicated by the experience of Massachusetts, where Harvard University and the Massachusetts Institute of Technology have, in conjunction, recently established a school for health officers. It is planned to increase the facilities for research in sanitary [illegible] W. H. Dittoe, Director of the Division of [illegible] plans to place actual engineering problems before the students of the Ohio State University. In the Division of Communicable Diseases problems which confront the inspectors demanding research along laboratory and field lines will be rendered easy of solution when the ample facilities of the university and of the medical department in connection therewith, are added to those already possessed by the board of health. The Division of Hygienic Laboratories still occupies offices in the Hartman Building but a change will be made as soon as the Botany Building on the campus is vacated and the necessary remodeling completed. When this is done a larger field of usefulness for the laboratories will be opened. The other state departments, of which the State Board of Administration may be mentioned as an example, will be given material aid along this line. Much of the laboratory work now being done for the state is performed at a much greater expense than would be the case were the Hygienic Laboratories to take charge of it. This means of effecting a closer cooperation between the various state departments will not only affect material economy in money but will place at the disposal of the state much more efficient machinery with which to perform its manifold duties. When the laboratories have made this move it is proposed that the various vaccines and antitoxins which play a part in public health work, will be manufactured by the laboratories in connection with the veterinary and laboratory divisions of the university.

FOREIGN

Canal Zone Changes.—Lieut.-Col. Charles F. Mason has been appointed chief health officer of the Canal Zone, to take office April 12.——Lieut.-Col. George D. Deshon has been appointed superintendent of the Ancon Hospital, and presumably superintendent of the Hospital Service of the Canal Zone.

Grants for Scientific Research.—The Robert Koch Foundation at Berlin for Research on Tuberculosis has granted a subsidy of $500 to Professor Lexer of Jena for research on the action of light rays on tuberculous tissue, and to Professor Kayserling of Berlin to carry on his roentgenologic investigation of the distribution and extent of infection in tuberculosis-ridden families.

Deaths in the Profession Abroad.—F. Körte, the oldest physician of Berlin, aged 96, father of Professor Körte, the well-known surgeon. In his prime he took a leading part in all matters affecting the profession in general.——J. Schlimpert, privat-docent of gynecology at the University of Freiburg.——O. Morisani, formerly professor of obstetrics and gynecology at the University of Naples.——H. von Wyss, privat-docent of internal medicine at the University of Zurich.——H. Grabower, privat-docent of nose and throat diseases at Berlin, and W. Bernoulli of Basel, aged 76.

Anesthetic Society for Scotland.—A dinner was held on February 20 in Edinburgh which was attended by anesthetists from Edinburgh, Glasgow, Aberdeen and Dundee; Dr. D. C. A. McAllum, Edinburgh, was in the chair. At a business meeting held after the dinner, it was resolved to form a society to be known as The Scottish Society of Anesthetists, the objects of which should be "to further the study of the science and practice of anesthetics, and the proper teaching thereof." It was resolved to limit the membership of the society to those practicing the specialty of anesthetics, but that other members of the profession interested in the subject should be invited as guests to the meetings to take part in the reading and discussion of papers. Office bearers were appointed as follows: president, Dr. McAllum; vice-president, Dr. Boyd, Glasgow, and secretary-treasurer, Dr. Stuart Ross, Edinburgh. It is intended to hold two meetings yearly, in April and October, taking each of the four cities in rotation.

American Dental School in China Suggested.—Consul General Amos P. Wilder, at Shanghai, according to the *Daily Consular and Trade Reports*, suggests the founding of a school for teaching dentistry in China on the lines of the Harvard Medical School, Shanghai. The medical school has a faculty of ten physicians and surgeons and is supported by the alumni and friends of Harvard. Wilder says the need for a dental school is great, as dentistry outside of the treaty ports is almost entirely in the hands of the natives whose methods and instruments are crude. A number of American dentists are located in the treaty ports, where their work is found to be satisfactory and many of them have built up good reputations and have large incomes. Wilder says, however, that young American dentists should not be encouraged to locate in China, on account of the frequent stories of disappointment, failure and tragedy among men who have attempted it without having the necessary staying qualities and character. Many of the native dentists are youths who have spent time as assistants in the offices of foreign dentists in China and have thus acquired a smattering of the work. There are no license requirements.

General Gorgas in South Africa.—The *Rhodesia Herald* of January 24 contains an extended account of the visit of General Gorgas to Salisbury, Rhodesia, where he made an address on his work in Cuba and Panama. His address, which was illustrated with lantern slides, is given in full in the paper and was received with great interest by the people of Salisbury. He sketched the history of the mosquito theory of yellow fever, malaria and other tropical diseases, and described the experimentation on yellow fever in Cuba, which demonstrated that the mosquito is the only source of transmission of yellow fever. He then described the work in Panama by which the death-rate during the first year or two was cut down from the French figures of about 250 per thousand to six or seven. He also described the life history of the mosquito and the manner in which it transmits diseases and also the method of getting rid of it and guarding against infection in the Canal Zone. General Gorgas also described and illustrated many of the construction features of the canal. The problems of tropical diseases in this portion of South Africa are somewhat different from those in the Canal Zone, inasmuch as there is no yellow fever to contend with, but other mosquito-borne diseases. Malaria is the chief problem in the vicinity of Salisbury, and the speaker who followed General Gorgas thanked him for his address and declared that the eradication of this troublesome infection on the lines laid down by General Gorgas would certainly be taken up by the communities in South Africa. The mayor of Salisbury in welcoming General Gorgas, referred to his work in America and extended congratulations on his promotion to be Surgeon-General of the United States Army.

CANADA

Personals.—Dr. Arthur Wilson has been appointed medical officer of health for Saskatoon, Sask.——Dr. Ernest A. Hall, Vancouver, B. C., has returned from a trip around the world.

Typhoid Near Montreal.—In eight towns, all within a few miles of Montreal, seventy-seven cases of typhoid fever exist, according to reports issued by Dr. Elzear Pelletier of the Quebec Board of Health.

Work of Public Health Nurses.—The public health nurses of Toronto now visit in connection with the Tuberculosis Clinics at the Toronto General Hospital, St. Michael's, Hospital for Sick Children and the University Settlement. They also visit the Baby Consultations established by seven social agencies, a work affiliated with the Hospital for Sick Children.

Liquor and Tobacco Legislation.—As the consumption of liquor and tobacco is increasing in Canada, the Dominion Parliament proposes to wrestle with the increase which will probably take the course of curtailing the manufacture of spirituous and malt liquors. One member of the government has a bill to prohibit the manufacture, importation and sale of cigarettes, which will be introduced shortly.

Waste of Water.—The Canadian Conservation Commission has issued some statistics regarding waste of water in various cities. The average consumption of ten typical Canadian and American cities is 160 gallons per head of population per day. In twelve European cities it is only 35½ gallons per head, leaving 120 gallons wasted per head per day in Canadian and American cities. This extra cost has been estimated for a city of 250,000 at $2.45 per inhabitant per annum.

Hospital News.—Stratford, Ont., faces a deficit for its general hospital during the past year, attributable to the high cost of living. The per diem cost of patients was 41.58 cents, while the bulk of the 627 patients paid $6 or less per week, forty-four being free patients. The hospital has a floating debt of over $5,000 and efforts will be made to induce citizens to liquidate the same.——Trouble between the two sections of the management of the Western Hospital, Toronto, has broken out anew over the presentation of alleged unsatisfactory legislation by the board of governors to the Ontario legislature. The trouble surrounds an amendment made to the act of incorporation in 1901, which granted the right to members of the corporation to one vote for every $100 contributed, also the power to cast this vote by proxy. If this is allowed to be exercised it will give the control of the hospital into the hands of a few men: The right has never been exercised until a few months ago. No multiple or proxy voting is allowed to obtain in any other hospital in Ontario, and the malcontents will urge the government to place the Western Hospital on the same basis as the other hospitals of the province. Dr. John Ferguson, the secretary of the board of governors since the hospital was established, states that 50 per cent. of the staff, 80 per cent. of the corporation, and 96 per cent of the board and 96 per cent. of the money interest of the hospital are asking for the present amendments before the legislature. He further states that the most valuable asset the hospital has is that of multiple and proxy voting.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 21, 1914.

The Medical Service in India

Western medicine was introduced into India by the medical service of the Indian Army, recruited in the first instance entirely from Great Britain. Civil medical appointments have been given to medical officers of the army and formed valuable emoluments. For some years the medical service has been thrown open to natives, but as the examination for admission takes place in London they formed a small minority of the successful candidates. At the last few examinations there has been a great increase in the number of successful native candidates, owing to a falling off in the number of British candidates. This is attributed to two causes: The insurance act has greatly improved the financial position of the physicians engaged in industrial practice and provided many openings for young men, and there has been dissatisfaction with altered conditions of the Indian medical service. With the establishment of medical schools in India a class of native graduates has arisen which, with the improvement of these schools, has become more and more competent. Naturally the natives object to all the higher civil medical appointments being reserved for the officers of the Indian Army. The government at home sympathizes with this view, and Lord Morley, secretary for India, has issued a memorandum to the Indian government to the effect that these appointments should be thrown open to civilian physicians. This has caused the Indian medical service of the Indian Army to become less popular in Great Britain.

The native point of view is well expressed in a representation of the Bombay Medical Union to the government. This union was established in 1883 and is the leading organized body of Indian medical graduates. It now asks for the equalization of the status of Indian aspirants for the medical services with that of their European compeers. The union points out that the only door for the admission of Indians into the Indian medical service, which covers all the higher posts in the country, is the competitive examination held biannually in London, so that the bulk of the Indians are shut out. The result is that the Indians are relegated to the lower grades of "civil assistant surgeons." They are shut out from professorships in colleges, important civil appointments, and specialists' posts in bacteriologic and sanitary departments, jails and lunatic asylums. The medical service of the Indian Army is essentially a military service, and those of its members in civil employ are "lent." However necessary this "lending" was when the germ of western science had not taken root in India, it is no longer necessary. The union asks for the total separation of military and civilian appointments and the constitution of a new service to be called the Indian Civil Medical Service, which would consist of professorships, higher administrative and expert appointments, and appointments in bacteriologic, chemical, scientific and sanitary departments and lunatic asylums. The appointees should be recruited from the entire medical profession. An unfortunate result of the present system is that an army surgeon is often appointed to a professorship in consequence of his military rank, regardless of his fitness for teaching the particular subject. Moreover, he is so overburdened with army work and private practice that he is not able properly to attend to his professorial duties.

The other side of the question is given in a statement made by invitation to the Secretary of State for India by the British Medical Association. The secretary requested the association to assist him in ascertaining the causes of the falling off of candidates for the medical service of the Indian Army. It is pointed out that less than a quarter of a century ago the private practice among all classes and races in India lay in the hands of the officers of the medical service of the Indian Army, and large fees were quite frequently and easily obtained. Now this is rapidly passing into the hands of native practitioners, with the result that in many cases the officer has to live on his pay alone, which is insufficient. To make matters worse, the government of India introduced regulations limiting the fees of medical officers. With regard to the allegation that the army surgeon interferes with the practice that rightly belongs to the Indian practitioner, it is pointed out that it is the army surgeons who have trained the men by whom it is now proposed so lightly to replace him. Indeed, already the teacher has been largely replaced by the pupil, and this will go on. The native profession is in a virile state, and instead of officers of the service encroaching on the rights of independent members of the profession it is they who have acquired the practice formerly enjoyed by officers in the service. It is not to be denied that a large imperial policy might demand and even justify the replacement of the men of the governing class by those of the governed, provided it could be shown that the time had come for such a step, and that the men replaced were compensated on such a scale as to remove all trace of a suspicion that they had been treated unfairly. But the time has not come, and for many years India will need the best men the profession at home can supply to foster its still immature profession. High standards of work and morals must be set before the Indian students. These can be set only by men whose enthusiastic devotion to duty, and unhesitating obedience to a high code of probity and honor, are the inheritance of long generations of thought and training. To take the step now contemplated by the government of India is to cut off the supply at its source. Apart from the effect on the war reserve, the result would be a wide-spread deterioration in the morale, the training and the efficiency of the medical profession in India.

Action for Negligent Administration of Anesthetic

A girl, aged 6, underwent operation for adenoids and enlarged tonsils. The operation was performed successfully, but the child's face was severely blistered in consequence of the spilling of the anesthetic. An action was accordingly brought for damages against the London County Council, at one of whose school clinics the operation was performed. A physician who attended the child subsequently gave evidence to the effect that ointment should have been put on the face when any anesthetic containing chloroform was used. He admitted that a slight burn might be unavoidable if a child struggled much. He had never known such a severe burn from an anesthetic even when no ointment was used. From the character and area of the burn it looked as if the anesthetic had been spilled. The mark of the burn was still apparent and it might prove a permanent disfigurement. The jury found that the anesthetist had not been guilty of negligence, and a verdict for the defendants was accordingly given.

The After-Care of the Insane

The organization known as the After-Care Association, formed to facilitate the readmission into social life of poor persons discharged cured from asylums and hospitals for the insane, is a most useful one. At the annual meeting just held, Sir Thomas Barlow, president of the Royal College of Physicians, presided. He said that formerly charitable persons were content to relieve the immediate needs of the poor, the sick, the maimed and the blind, but now it was recognized that those who had been afflicted ought to be set on their feet again. There had therefore been a great development in the establishment of convalescent homes and garden and farm colonies in connection with sanatoriums in order to bridge over the interval between recovery from illness and the return to wage-earning, and there had also been a great development of auxiliary associations which gave to public institutions help that voluntary aid alone could supply. Social problems could not be solved by leaving everything to be done by the state—a very shallow and mischievous proposal—but the solution lay in supplementing the efforts of the public authorities and the old endowed charities by enlightened voluntary effort. Of the auxiliary institutions, none deserved support more than the After-Care Association. The average charitable person did not sufficiently reflect on what was to become of those who were discharged from asylums. Persons' minds should be disabused of the pessimistic idea, which used also to be held about consumption, that cases of mental disease were hopeless.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Feb. 20, 1914.

Death of Alphonse Bertillon

M. Alphonse Bertillon, director of the legal identification service, has just died of pernicious anemia at the age of 66. He was not a medical man, but his father was Dr. Louis-Adolphe Bertillon, the well-known statistician, and one of the founders of the Ecole d'anthropologie and the Société d'anthropologie, and his brother was Dr. Jacques Bertillon, formerly head of the department of municipal statistics of the city of Paris. It was in 1877, entirely by chance, that Alphonse Bertillon become a member of the prefecture of police. Two years later he was shifted to the photographic service where he developed the anthropometric system. The photographic department was a practically worthless chaos of documents. Bertillon tried to arrange them in some order. He thought at first of utilizing the shades of the eyes and hair, but such a base was too unstable and too changeable for the foundation of a serious classification, particularly since hair whitens with age. Bertillon had no better success in the use of the differences in stature, to which he subsequently resorted. It was then, remembering the work of his father, that he had the idea of using anthropometric traits. Later he devoted himself to the study of finger-prints, which are especially valuable in the identification of young criminals, since until the age of 20 or 21 all anthropometric traits change and tables made before that age soon become worthless.

Dr. Manouvrier of the Ecole d'anthropologie, who examined the brain of Bertillon, found that it weighed 1,525 gm. This is remarkable (the average is 1,360 gm.), especially since the brain was anemic and weakened by the long and debilitating sickness. Dr. Manouvrier, who has examined the brains of a number of well-known persons—notably that of Dr. Louis-Adolphe Bertillon, who died in 1883—will publish later a complete study of the brain of M. Alphonse Bertillon.

Health of the Army

At present the general health of the army is not good. Many cases of cerebrospinal meningitis and epidemics of measles and mumps have been noted in various garrisons, and there are numerous cases of grip and affections of the respiratory organs. The reasons for this state of affairs are many. There is, of course, the exceptional severity of the winter, the consequences of which are now making themselves felt. But the principal cause is the application of the new three-year service law. For one thing, this law has the effect of calling two classes of recruits into service simultaneously, and it is well known that young soldiers are the most frequent victims of sickness. On the other hand, in a number of stations it was impossible to offer the troops anything but unfinished or just finished quarters, involving the usual inconveniences of new buildings, such as humidity, etc.

Appendicitis from Chipping of Enameled Ware

It is well known that in the etiology of appendicitis small pieces of enamel from the chipping of various utensils are often implicated. The Conseil d'hygiène publique et de salubrité du departement de la Seine last year instructed M. Martel, head of the veterinary service, to investigate the often-noted presence of fragments of enamel in sausages. M. Martel demonstrated the danger of enameled cooking-utensils, which always end by chipping. The Conseil d'hygiène therefore asked the chief of police to prohibit the use of such utensils, and, considering the importance of the question, decided to announce its decision to the Minister of the Interior so that a general interdiction might be made.

The Conseil supérieure d'hygiène, interested by the question, had requested Dr. Bordas to make a similar investigation, and this confirmed M. Martel's conclusions in every particular. But M. Mirman, director of the public charities and hygiene under the interior department, came to the conclusion that it was impossible, under the present law, to issue a formal edict of prohibition. This will not be possible until the Senate has passed a law which it is now considering. Meanwhile, he is requesting prefects to inform butchers and sausage makers of the danger to consumers of food cooked in enameled utensils, and to use different ones. On the suggestion of Senator Cazeneuve, M. Mirman has called attention to another frequent cause of appendicitis, namely, the filings left in mended bread-troughs. He asks that bakers discontinue the use of these.

Personal

At the meeting of the Académie de médecine, February 17, two foreign correspondents were elected. The names of Bordet, Brussels; Henrijean, Liége; Flexner, New York, and Dr. Minot, Boston, were presented. Bordet and Henrijean were elected. Bordet is professor of bacteriology of the Faculté de médecine de Bruxelles, and is known by his works on immunity and on the deviation of complement. Dr. Henrijean is a professor on the Faculté de médecine de Liége and will be president of the coming congress of French-speaking doctors, which will be held this year at Brussels.

Gold medals of the Carnegie foundation, for those who have contracted mortal diseases or very serious diseases in the performance of their duties, have been awarded to Drs. Bergonie, Bordeaux and Guilloz, Nancy, and to M. Infroit, head of the roentgenographic laboratory of the Hospital of Salpêtrière, who received in addition, 10,000 francs.

Marriages

Alfred Varney Blackstone, M.D., Absarokee, Mont., to Miss Minnie McKay of Missoula, Mont., at Absarokee, February 21.

Harold Fairchild Budington, M.D., Springfield, Mass., to Miss Josephine Elizabeth Eckel of Bridgeport, Conn., February 26.

Thomas Friend Willson, M.D., to Mrs. Clara Buckingham Downs, both of Arcola, Miss., at Memphis, Tenn., January 15.

Joseph Ingram Mershon, M.D., Mount Carroll, Ill., to Miss Dorothy Canfield of Wabasha, Minn., in Chicago, February 21.

Worth Ross, M.D., Detroit, Mich., to Miss Alice Louise Browne of Bay City, Mich., January 22.

Martin Crowell Maddan, M.D., to Miss Fern Lawrence Gould, both of Old Town, Me., March 5.

Abram Reynolds Moist, M.D., to Miss Agatha M. Weber, both of Dayton, Ohio, February 17.

Willis Harvey Taylor, M.D., to Mrs. Myrtle Brown, both of Omaha, Neb., recently.

Deaths

Matthew James McKinnon, M.D. University of Maryland, Baltimore, 1853; a member of the Medical Society of the State of Pennsylvania; surgeon of the Forty-Third Pennsylvania Volunteer Infantry during the Civil War; at one time city treasurer of Hagerstown; one of the organizers, and for several years president of the York County Medical Society; one of the founders of York Hospital; for nearly forty years local surgeon for the Pennsylvania system, and for two terms a member of the Pennsylvania legislature; died at his home in York, February 23, aged 82.

John Frederick Welch, M.D. Bellevue Hospital Medical College, New York City, 1880; a Fellow of the American Medical Association; president of the Norfolk South District Medical Society; for several years a member of the Board of Health and city physician of Quincy, Mass., and chairman of the trustees of the Quincy City Hospital; first president of the Quincy Anti-Tuberculosis Society; died at his home February 23, from disease of the kidney, aged 58.

Charles Irwin Hill, M.D. Baltimore Medical College, 1899; for several years a member of the faculty of his Alma Mater; from 1900 to 1904 assistant surgeon, N. G. Maryland, with the rank of captain, assigned to the Fourth Infantry; formerly assistant physician and pathologist at the Springfield State Hospital and Mount Hope Retreat; died at his home in Baltimore, February 24, aged 35.

Ralph Lyman Parsons, M.D. New York Medical College, New York City, 1857; a member of the Medical Society of the State of New York, and New York Academy of Medicine; superintendent of the New York City Asylum for the Insane from 1865 to 1877; thereafter in charge of a private sanatorium in Ossining; died at his home in that place, February 26, aged 85.

George W. Nafe, M.D. Philadelphia University of Medicine and Surgery, 1871; Bennett Medical College, Chicago, 1886; a member and once president of the Michigan State Medical Society; president of the State Board of Registration in Medicine; health officer of Newaygo County; was found dead in his office in Fremont, February 24, from heart disease, aged 65.

Hiram J. Coon, M.D. Medical College of Indiana, Indianapolis, 1881; district surgeon of the Big Four and Vandalia systems, and vice-president of the Association of Surgeons of the Pennsylvania system; died at his home in Colfax, February 27, from cerebral hemorrhage.

Octave G. Browne, M.D. Tulane University, New Orleans, 1882; for many years a member of the St. Gabriel Parish school board, and a practitioner of St. Gabriel; was found dead from exposure on a road near the Monticello Penal Farm, February 25, aged 57.

Samuel G. Meredith, M.D. Eclectic Medical Institute, Cincinnati, 1885; a member of the Missouri State Medical Association; professor of diseases of children in the Eclectic Medical University, Kansas City; died at his home in Cowgill, Mo., February 20, aged 62.

Ira D. Hopkins, M.D. University of Buffalo (N. Y.), 1869; one of the founders of the Utica, N. Y., Dispensary, and for more than half a century a practitioner of that city; died at his home, February 23, five days after an accidental fall at his office, aged 81.

Charles William Imwall, M.D. Dearborn Medical College, Chicago, 1907; College of Physicians and Surgeons, Chicago, 1908; a Fellow of the American Medical Association; was found dead in his apartment in Chicago, March 4, from heart disease, aged 33.

John H. Evans, M.D. Tulane University, New Orleans, 1884; a Fellow of the American Medical Association, and president of the Texas State Board of Medical Examiners; died suddenly from heart disease, February 24, at his home in Palestine, aged 57.

John Fremont Hurlbut (license, Idaho, 1902); formerly a Fellow of the American Medical Association; county physician and chairman of the board of health of Nez Perce County, Idaho; died at his home in Lewiston, February 22, from nephritis, aged 52.

Stacy Hemenway, M.D. Chicago Medical College, 1862; a Fellow of the American Medical Association; and for many years surgeon at the Klamath Indian Agency, Yainax, Ore.; a veteran of the Civil War; died at his home, February 19, aged 77.

John Albert Cook, M.D. Trinity Medical College, Toronto, 1895; a member of the Indiana State Medical Association; and a resident of Goshen, Ind.; died in St. Vincent's Hospital, Toledo, Ohio, February 25, from Hodgkin's disease, aged 39.

Charles Edward Spring, M.D. Western Reserve University, Cleveland, Ohio, 1903; aged 34 was almost instantly killed while attempting to jump from an automobile which was apparently about to collide with a street-car, February 28.

Hiram B. Denman, M.D. Cincinnati College of Medicine and Surgery, 1869; a member of the Ohio State Medical Association; for many years a practitioner of Lena; died in Sidney, Ohio, February 14, from cerebral hemorrhage, aged 71.

Anna Mary Goebel, M.D. University of Michigan, Ann Arbor, 1885; said to have been the first woman physician of Lima, Ohio; died at the home of her brother in Washington, D. C., February 28, from disease of the spinal cord, aged 62.

Alfred Carty Stratton, M.D. Medico-Chirurgical College of Philadelphia, 1913, and honor man of his class; died February 26, from scarlet fever, contracted while fighting an epidemic at his home in Florence, N. J., aged 23.

Storm White, M.D. New York Homeopathic Medical College, 1879; for six years connected with the Metropolitan Hospital pathologic laboratory, Blackwell's Island, N. Y.; died at his home in New York City, February 26, aged 57.

William R. Gieser, M.D. Hahnemann Medical College, Philadelphia, 1892; a police surgeon of Philadelphia and a member of the staff of Hahnemann Hospital; died at his home, February 26, from heart disease, aged 55.

Charles S. Rannells, M.D. Washington University, Baltimore, 1876; a member of the Kansas Medical Society, and for thirty-six years a practitioner of Allen County; died at his home in Savonburg, about February 26.

Salathiel Bainbridge Ayres, M.D. Rush Medical College, 1866; a Confederate veteran; local surgeon of the Chicago and Alton system at Louisiana, Mo.; died at his home in that city, February 24, aged 75.

Frederick Farnsworth, M.D. Bellevue Hospital Medical College, 1867; since 1869 in manufacturing business; died in his apartments in New London, Conn., February 23, from cerebral hemorrhage, aged 71.

Thomas Mills Nixson, M.D. University of Pennsylvania, Philadelphia, 1858; physician to the Calloway County, Mo., Infirmary; a "Forty-niner"; died at his home in Ham's Prairie, February 23, aged 85.

Elisha M. Bean, M.D. Cincinnati Physio-Medical College, 1871; a practitioner of Athens County, Ohio, since 1839; died at the home of his daughter in Athens, February 22, from senile debility, aged 93.

William J. Bates, Jr. (license, W. Va., 1881); for many years a member of the board of commissioners of Ohio County; died at his home in Wheeling, February 25, from heart disease, aged 67.

Edmund A. Rawson, M.D. Drake University, Des Moines, Iowa, 1888; a member of the Iowa State Medical Society, and a veteran of the Civil War; died at his home in Madrid, February 16, aged 73.

James Drysdale Balfour, M.D. Western University, London, Ont., 1887; professor of obstetrics and pediatrics of his Alma Mater; died at his home in London, January 7, from lobar pneumonia, aged 57.

Christopher C. Walker, M.D. Tulane University, New Orleans, 1866; a Confederate veteran; formerly a practitioner of Gainesville, Tex.; died at his home in Los Angeles, February 23, aged 72.

Nathan B. Gardner, M.D. Missouri Medical College, St. Louis, 1889; a Fellow of the American Medical Association, and a practitioner of Loami, Ill.; died at Biloxi, Miss., February 27, aged 54.

James Thomas Kinsler, M.D. Bellevue Hospital Medical College, 1867; surgeon of Volunteers during the Civil War; died at his home in Omaha, February 20, from cerebral hemorrhage, aged 71.

Henry Connell Allen, M.D. New York University, New York City, 1888; local surgeon of the Southern Pacific system; died at his home in San Fernando, Cal., February 22, aged 50.

Alexander Ennis, M.D. Albany (N. Y.) Medical College, 1855; one of the oldest practitioners of Schenectady County, N. Y.; died at his home in Pattersonville, February 16, aged 84.

John F. Shaffner, M.D. Medical College of Ohio, Cincinnati, 1875; a veteran of the Civil War; died at his home in Willshire, Ohio, February 7, from cerebral hemorrhage, aged 85.

W. A. Love, M.D. College of Physicians and Surgeons, Keokuk, Iowa., 1878; a pioneer practitioner of Wayne County, Neb.; died at his home in Carroll, February 18.

Edmund B. Cummings, M.D. Kansas Medical College, Topeka, 1904; a member of the Kansas Medical Society; died at his home in Bronson, February 13, aged 41.

George W. Cook, M.D. Chicago Homeopathic Medical College, 1891; formerly of Holt, Mich.; died at a sanatorium in Howell, Mich., about February 10, aged 48.

Samuel M. McDowell, M.D. Medical College of Ohio, Cincinnati, 1880; died at his home in Elko, Nev., January 5, from pulmonary tuberculosis, aged 73.

Alvah H. Dorris, M.D. Hahnemann Medical College, Chicago, 1875; died suddenly at his home in Lincoln, Neb., February 23, from angina pectoris, aged 76.

Paul Rose, M.D. Hahnemann Medical College, Chicago, 1893; formerly of Flint, Mich.; died at his home in Highland Park, Detroit, February 20, aged 46.

Gustave Eduard Holmberg, M.D. Eclectic Medical College of the City of New York, 1906; died at his home in Peekskill, N. Y., February 18, aged 43.

Belle Shotwell Howard, M.D. Homeopathic Medical College of St. Louis, Mo., 1883; formerly of Peoria, Ill.; died in Hollywood, Cal., February 7.

Henry Irwin Rankin, M.D. Western Pennsylvania Medical College, Pittsburgh, 1896; died at the home of his sister in Chicago, recently, aged 45.

Albert Henry Tompkins, M.D. Boston University School of Medicine, 1875; died at his home in Jamaica Plain, Boston, February 14, aged 70.

Anselm Dimmic Hatch, M.D. College of Physicians and Surgeons, Baltimore, 1882; died at his home in Orleans, Mass., January 4, aged 50.

John Gregg Follin, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1861; died at his home in Plymouth, Ill., February 5, aged 88.

George Foster Forbes, M.D. Boston University School of Medicine, 1874; died at his home in Worcester, Mass., January 30, aged 82.

Whitfield Brooks, M.D. Columbia University, Washington, D. C., 1861; of Rosman, N. C.; died at Lake Toxaway, January 17, aged 73.

John Blandeer Smith, (license, Pennsylvania). A practitioner since 1866; died at his home in Lawrenceville, December 31, aged 74.

Robert G. Hassard, M.D. Yale University, New Haven, Conn., 1862; died at his home in Thomaston, Conn., recently, aged 71.

Miles Scott, (license, Tennessee, 1889). Died at his home near Barrenplain, February 12, from heart disease, aged 58.

Frederick P. Townsend, (license, Maine, 1895). Died at his home in Newport, Dec. 27, 1913, aged 73.

J. C. F. Maloney, (license, Kansas, 1901) died at his home in Shawnee, February 17, aged 83.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

GRAND PRIX AND GOLD MEDALS FOR SALE

Max Kaiser Offers to Procure "Awards of Merit" at Various International Exhibitions — Price, Four Hundred Dollars

There was a time when the manufacturer who could point to the "Grand Prix" or the "Gold Medal" his product had been awarded at some exhibition was considered to have a valuable advertising asset. Possibly there was a time when medals and prizes were awarded with an eye single to the excellencies of the goods and bore no relation to the amount of money paid by exhibitors to the organizers of the exhibition. Possibly there are, even to-day, occasional awards made on a basis of pure merit, but they are probably few and far between. The matter which follows throws an interesting light on this subject. Within the past two months manufacturers have received a letter on the stationery of the "International Exhibition, Paris, 1914." The letter came from the "Commissioner-General" of the exhibition, one Max Kaiser, 24 Holborn, London, E. C. Here it is:

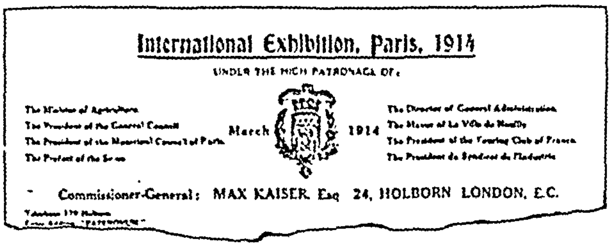
> "*Dear Sirs:*—I beg to draw your attention to the great INTERNATIONAL EXHIBITION of Alimentation, Pure Food, Hygiene, Beverages, Drugs and allied trades, which will be held at Paris in March, 1914, inviting you to partake with your manufacture at this INTERNATIONAL EXHIBITION. I beg to point out that the aim of this Exhibition is to introduce Foreign Manufactured Goods, Proprietary Articles, Patents, etc., to the French and Foreign Markets, and to open up or extend new channels for such goods.
>
> "A Commercial Office at the Exhibition Building, under the Commissioner General's own supervision, with a well-trained staff, will do everything required in the interest of Exhibitors, such as effect sales by circularizing, or inviting prominent buyers to call at your particular stall to judge for themselves the merits of your Exhibit, and in this way bring the American Manufacturers in direct touch with the Foreign markets and the Buying Public.
>
> "This Commercial Office will also negotiate with the Representatives on your behalf: at the same time undertaking to arrange your Exhibit, supply all necessary fittings, decoration, the display, maintenance, repacking and returning of the Exhibit, and also to represent you before the Public and Jury in such a manner as to make certain that your Exhibit shall be awarded first honors (GRAND PRIZE OR GOLD MEDAL).
>
> "You will understand that such an award obtained at this INTERNATIONAL EXHIBITION means an everlasting advertisement as an official acknowledgment and convincing proof to the Superior Quality of your goods, and will certainly put you in front of your competitors on the home market, and naturally increase your sales considerably.
>
> "I might mention here that many a big business has been built up and small concerns been prominently brought to the notice of the Public by Exhibiting. In many cases I have been able to interest Authorities and Reigning Houses in Exhibits under my care, and I have opened up or extended markets for firms Exhibiting under my direction.
>
> "I enclose herewith a list containing some of the most prominent American and English Firms whom I have represented at European Exhibitions and for whom I achieved splendid results.
>
> "I could arrange your Exhibit for the amount of $400, to be paid one-half on allotment and the balance on receipt of an award (Grand Prize or Gold Medal).
>
> "Trusting that this will be of interest to you, I shall be pleased to receive your reply by return mail, and give you any further particulars you may desire. Yours faithfully,
>
> The Commissioner General.
> (Signed) Max Kaiser.
>
> "I can also accept Exhibits on exactly the same terms for the INTERNATIONAL EXHIBITION, Rome, 1914."

The list Mr. Kaiser enclosed with his letter was a printed sheet, giving the names of a number of American and British manufacturers whom Kaiser claims to have "represented" at various "International Exhibitions." The majority of the concerns named are breweries, but there is a good sprinkling of "patent medicine" companies and a few miscellaneous manufacturers. In the American list there are two nostrum concerns named that will be more or less familiar to our readers. They are:

Alonzo O. Bliss Company, Washington, D. C. This company sells "the Great Blood Purifier, Kidney and Liver Regulator" known as "Bliss' Native Herbs." According to Max Kaiser, the Alonzo O. Bliss Company obtained one Grand Prize and one Gold Medal.

Waterbury Chemical Company, Des Moines, Iowa. This company exploits what used to be known as "Waterbury's Cod-Liver Oil Compound," which, from its lack of cod-liver oil,[1] was impelled to change its name to "Waterbury's Compound." Kaiser states that the Waterbury Chemical Company received four Grand Prix and four Gold Medals.

Briefly the proposition submitted by Max Kaiser is this: For $400 he will make all arrangements for a manufacturers' exhibit at one of the numerous "International Exhibitions." *Further, he practically guarantees that this exhibit will receive* either a "grand prize" or a "gold medal"; in fact, the manufacturer need not complete the payment of Kaiser's charges until the prize or medal has been awarded!



International Exhibition, Paris, 1914

UNDER THE HIGH PATRONAGE OF:

The Minister of Agriculture
The President of the General Council
The President of the Municipal Council of Paris
The Prefect of the Seine

March 1914

The Director of General Administration
The Mayor of La Ville de Neuilly
The President of the Touring Club of France
The President du Syndicat de l'Industrie

Commissioner-General: MAX KAISER Esq 24, HOLBORN LONDON, E.C.

Photographic reproduction (reduced) of the letter-head of the stationery on which Max Kaiser offers to "make certain" that those who exhibit their products under his direction—price, $400—shall receive a Grand Prix or Gold Medal.

The value of "awards" obtained in this way is, of course, evident. As the public becomes better informed on the subject of international exhibitions, the grand prix, gold medals, and other "awards" made at such exhibitions will be appraised at their true value.

THE NARROWING CIRCLE

Dr. Kidd Forsakes Quackery for Vaudeville, While Mr. Griffin Sells His Typewriters

> "Dr. James W. Kidd, who has been the head of the physicians' staff at the Kidd Medical Company since that concern has been in business, has taken a nine-year lease on the Orpheum Theater at Muscatine, Iowa . . . Dr. Kidd . . . will open the theater on March 1st as a standard, high-class vaudeville theater.
>
> "Dr. Kidd's departure from the city is brought about by the fact that the Kidd Medical Company is gradually going out of business. The typewriters owned by the concern, which number several hundred, are now being sold and the force has been greatly cut down in the past few months
>
> "It is said that W. M. Griffin, the head of the concern, has not yet decided what to do with the company's big building on Fairfield Avenue."

These extracts from the Ft. Wayne (Ind.) *News* of Feb. 26, 1914, are a sermon in themselves. For some years Ft. Wayne, Ind., has had its postal receipts enormously augmented by the activities of one William M. Griffin of that city. These same activities, incidentally, have given Ft. Wayne an unenviable and world-wide reputation as the home of some of the most impudent and heartless mail-order medical frauds in the world.

Griffin is a suave gentleman, who, some years ago, took over what was known as the Davis Medical Company, of which J. W. Kidd, M.D., was medical director. The name of the company was changed to the "Dr. J. W. Kidd Company," which did a fraudulent medical mail-order business, treating, it seems anything from corns to consumption. The fraud prospered. Money poured in and Mr. Griffin became *wealthy; also, as is often the case*, he became more or less of a power in his town and state. He identified himself with various commercial interests, was said to be a stockholder in a number of concerns, which gave him acquaintances among the substantial business men of his locality. Whenever subscriptions were being taken for laudable objects, Mr. Griffin's name usually appeared with a substantial donation. It is said that during one of the political campaigns Griffin furnished considerable money and that one of his "doctors" was the campaign manager for a congressional candidate. He is said, further, to have been a director of at least one of the local banks, and the names of some of the local banks have been extensively used as an advertising asset in his quackery. *For some time Griffin was president of the Commercial Club* of his city. The money he made so easily—and cruelly—was spent freely, whenever subscriptions for philanthropic or commercial enterprises were called for.

In addition to the "Dr. Kidd" mail-order fraud, Griffin also operated a concern under his own name that conducted a wagon-peddling business in various parts of the country. As the Kidd fraud prospered, Griffin extended his mail-order operations. The "Dr. Bertha C. Day Company" was one of Griffin's Ft. Wayne enterprises that made a "specialty" of the treatment of "diseases of women" on the mail-order plan. The Ovelmo Company, also of Ft. Wayne, was another Griffin mail-order concern, selling a "cure" for skin diseases. *Companies almost identical with the Bertha C. Day concern* were opened in San Francisco and Atlanta, under the names, respectively, of the Woman's Remedy Company and the Atlanta Remedy Company.

The utter fraudulence of the Bertha C. Day concern was made plain through an exposure[1] in THE JOURNAL, April 1, 1911. Following this exposure, Bertha C. Day left Griffin's employ, another renegade physician was taken in her stead, and the name of the Company changed to the "Woman's Health Institute." Reprints of THE JOURNAL's article on Bertha C. Day were sent to every officer of one of the Ft. Wayne banks that had permitted its name to be used as an advertising asset by the Day fakery, and reprints also were sent to more than fifty Ft. Wayne physicians. Several thousand of these reprints have since been sent broadcast over the country. Apparently this publicity has had its effect.

It may be safely assumed that Griffin is not closing his fraud-factory for any other reason than that of expediency. Those familiar with local conditions used to express the opinion that Griffin was so firmly entrenched, commercially, *politically and socially*, that it would be well-nigh impossible to put an end to his mail-order frauds. What was apparently impossible of accomplishment by municipal or state action has been found feasible through federal intervention. The Griffin concerns have defrauded thousands of people through the United States mails. It is but simple poetic justice that the postal authorities should finally prove to be Griffin's nemesis.

There is little doubt that the light thrown on this dirty business by the American Medical Association is largely responsible for the breaking up of an enormously prosperous and utterly fraudulent enterprise. As we said at the outset, Ft. Wayne will doubtless suffer the loss of many hundreds of thousands of dollars in postal receipts from the closing of Griffin's fakeries. *On the other hand, she will gain in self-respect* and in reputation much more than she will lose. The time is coming when cities will be as jealous of their reputation as are individuals. When that time comes, the mere lure of increased postal receipts will not be a sufficient sop to the civic conscience to permit the establishment of cruel and heartless enterprises. Meanwhile, that dark circle of *semi-legalized* fraud in which the medical mail-order fakers work is narrowing. May it diminish to the vanishing point!

For Truth.—"The fact is that the most useful parts of science have been investigated for the sake of truth, and not for their usefulness."—Clifford.

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[1] For THE JOURNAL's exposure of this product see "Propaganda for Reform," eighth edition, page 118.

[1] Reprinted in pamphlet "Viavi, Female Weakness Cures and Allied Frauds," price 6 cents.

Correspondence

A New Method for Preserving Complement for Making the Wassermann or Noguchi Blood-Test

Any one familiar with the Wassermann or Noguchi blood-test knows that the complement, or guinea-pig blood-serum, will lose all its complementary power within from forty-eight to seventy-two hours. I fancy that every man doing these tests has at least wondered if one could in any way preserve the guinea-pig serum, and consequently avoid having to collect fresh serum at least twice a week.

I have found by laboratory experiments that a 25 per cent. saline solution will preserve the complement in an ordinary test-tube, if in an ice-box, for two or three weeks, and, if sealed in capillary tubes, for a month or two.

I use a 40 per cent. dilution of guinea-pig blood-serum diluted with a 25 per cent. saline solution. When making the test I use a 0.6 per cent. saline solution instead of the 0.9 per cent. solution as recommended by our leading authorities. When I add 0.1 c.c. of the 40 per cent. dilution I get approximately 0.9 per cent. saline solution. This does not affect the reliability of the test in any way.

F. D. Austin, M.D., Charlotte, N. C.

Some Glycothymoline Logic

To the Editor:—Detail men as a class have a rather poor opinion of physicians they visit. This may not appear in the regular monologue but it always comes out on cross-examination. If you stop a detailer in the middle of his rime and put a query of your own, he soon shows how little he knows about the subject he is trying to teach, and how much less he thinks you know about it.

If you timidly mention a report of the Council on Pharmacy and Chemistry which differs in any particular from the data handed out by the monologist, he never hesitates to tell you bluntly of what a parcel of pikers the Council is composed. The secretary of the Council, who signs these ridiculous reports on proprietary preparations, is merely trying to satisfy a personal grudge which it seems the secretary has long nursed against various and sundry proprietary manufacturers! So a Mulford representative recently complained; also a Sal-hepaticalite.

Looking back over several years, I recall but one thing a detail man ever told me which was worth the time given him, That was a secret imparted by a Glycothymoline agent.

This Glycothymoline man was so jovial and good natured that it was *utterly impossible to show him the palms of my hands*. And besides, he started right off the bat to put me down for several extra pint bottles to follow up the good work he hoped I would do with the dozen small sample vials, each with the name blown in the glass to insure the doctor against substitution by unscrupulous druggists—though just how the u. d. was to effect the change between the doctor's office and the patient's hands the agent did not take time to explain. In fact his talk was very much like this paragraph—rambling on and on, without a pause for breath or interruption, until you hardly know at the end just what was said at the beginning, and before you can collect the thread of thought the agent is off again on another long tack and you trailing after him like a bather on a plank towed by a speed boat.

But at last the agent choked on a long word, and while he paused for a fraction of a second to clear his throat I seized the opportunity and remarked that I never prescribed things with the name blown in the bottle, nor had I any need for Glycothymoline. The National Formulary furnished me a perfectly satisfactory preparation in cases which needed an alkaline wash.

This was quite a long rejoinder for a doctor to make in such an interview, I am well aware, but you see the man was almost choking and he could not stop me as soon as he would have liked. Presently, however, he swallowed that long word and raised his admonitory index-finger.

"Ah, but that's just the trouble with the N. F. imitation, Doctor," he declared. "That's just the trouble. I'm glad you brought that question up. The N. F. imitation isn't alkaline at all—it's acid, irritating. I know, because I worked in a drug-store myself and I've made gallons of the N. F. stuff—barrels of it, and it's acid, irritating. Now our product—"

"No. No," I shouted, gathering all my available strength and catching the agent on the end of his wind, "No, I've prescribed it and know it's alkaline, and not irritating."

But the agent, like the old lady's companion in the Mother Goose book, simply would not get over the stile, so we decided to test the thing. We got some red litmus paper and a bottle of Liquor Antisepticus Alkalinus, N. F., which I happened to have in the office. We thrust the red litmus into the solution and got the most beautiful reaction—the bluest detail man I ever saw.

"Well, that's one on me," he admitted after a long and alarming silence. "I'll admit I'm in wrong. But our product has a purer alkalinity anyhow."

"Purer nonsense!" I replied. "Now you're sparring for wind, aren't you, really?"

Then the agent gave up. "Doctor, I'll say this much," he confided as we shook hands. "Most of the doctors I call on swallow most anything a man says. I'm darn glad they ain't all so particular! Good-by!"

And the moral: Why *is* a detail man anyway?

William Brady, M.D., Elmira, N. Y.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ARTICLES ON THE EFFECT OF TOBACCO-SMOKING

To the Editor:—I have a student who is conducting research work in connection with the effect of moderate smoking on heart-rate and blood-pressure, and I should appreciate a list of references to this topic.

G. B. Affleck, A.B., M.P.E., Springfield, Mass.

Answer.—Following is a list of references to literature on this subject:

The Pharmacology of Tobacco-Smoke, editorial, The Journal, Jan. 30, 1909, p. 380.
The Use of Tobacco, editorial, The Journal, July 2, 1910, p. 32.
The Effects of Tobacco on Body and Mind, Current Comment, The Journal, Oct. 1, 1910, p. 1206.
Some New Evidence on the Tobacco Question, Current Comment, The Journal, Nov. 16, 1912, p. 1798.
Foster, M. L.: Toxic Amblyopia Due to Tobacco, *Arch. Ophthal.*, July, 1913.
Friedmann, A. C. H.: Tobacco Poisoning, *Interstate Med. Jour.*, March, 1903; abstr., The Journal, April 11, 1903, p. 1027.
Larrabee, R. C.: Tobacco and the Heart; read before the Massachusetts Medical Society, June 9-10, 1903; abstr., The Journal, July 4, 1903, p. 50.
White, J. A. Henton: Some Effects of Tobacco, *Birmingham Med. Rev.;* abstr., The Journal, Jan. 30, 1904, p. 325.
Bamberger, J.: Hygiene of Cigar-Smoking, *München. med. Wchnschr.*, 1904, li, No. 30; abstr., The Journal, Sept. 3, 1904, p. 706.
Delie: Tobacco and Audition, *Rev. hebd. de Laryng.;* abstr., The Journal, May 13, 1905, p. 1551.
Arnold, M. B.: Effect of Tobacco-Smoke on Pathogenic Micro-Organisms, *Lancet*, London, May 4, 1907; abstr., The Journal, June 1, 1907, p. 1904.
Amerson, Sullivan, S. S.: Poison in Cigarettes, *Kentucky Med. Jour.*, August, 1907; abstr., The Journal, Aug. 17, 1907, p. 625.
Chilcott, W. L.: Effects of Tobacco, *Jour. Kansas Med. Soc.*, March, 1908; abstr., The Journal, May 2, 1908, p. 1459.
Bosi, A.: Different Technics for Experimental Research on Effects of Tobacco-Smoke, *Riforma med.*, 1909, xxv, No. 31.
Tobacco-Smoking and Circulation, editorial, The Journal, Feb. 7, 1914, p. 461.
Von Frankl-Hochwart, L.: Die nervösen Erkrankungen der Tabakraucher, *Deutsch. med. Wchnschr.*, 1911, xxxvii, 2273, 2321.
Pel: Un cas de psychose tabagique, *Ann. med. chir.*, 1911. xix, 171.
Ferran: De l'action du tabac sur l'audition, *Rev. méd. de Normandie*, 1911, p. 363.
Danis: Traitement de l'amblyopie nicotinique par la lécithine, *Progrès. méd. belge*, 1912, xiv, 11.
Clerc, A., and Pezzi, C.: Action de la nicotine sur le cœur isolé de quelques mammifères, *Compt rend. Soc. de Biol.*, 1912, lxxii, 316.

Hellenbower, R. C.: Toxic Amblyopia Caused by Alcohol and Tobacco, *Eclect. Med. Jour.*, 1912, lxxii, 167.
Bailey, T.: Tobacco: Its Effects. *Jour. Iowa State Med. Soc.*, 1911-1912, i, 55.
Gilfillan, J. S.: Effect of Tobacco-Smoking on Cardiovascular System, *St. Paul Med. Jour.*, July, 1912.
Mouriquand, G., and Bouchut, L.: Angina Pectoris and Tobacco, *Arch. d. mal. du Coeur*, October, 1912.
Effect of Tobacco on the Heart, Therapeutics, The Journal, March 15, 1913, p. 828.
Flessinger: Angina Pectoris Due to Tobacco, read before the Paris Académie de médecine; *abstr.*, The Journal, May 10, 1913, p. 1473.
Goodhart, S. P.: Amnesias of Tobacco and of Malarial Origin, The Journal, Dec. 27, 1913, p. 2287.
Pack, F. J.: Smoking and Football Men, *Pop. Sc. Month.*, 1912, lxxxi, 330.

TOTAL AND DIFFERENTIAL LEUKOCYTE COUNTS

To the Editor:—A and B are discussing the relative value of a differential white count and a simple white count. A says that the "differential" is all-important, presents the true picture and tells whether an acute septic condition is present or absent. B admits its value, but says that when malaria and the primary anemias are excluded and in cases which clinically present some acute surgical condition, then a plain white cell-count is sufficient and should be the routine measure. He quotes Murphy's December, 1913, "Clinics" to help his argument. F. R. W.

Answer.—As a rule in surgical conditions an increase of leukocytes above the normal will be composed mainly of the polymorphonuclears and hence may be interpreted as indicating a reaction against infection. In such cases a total number of leukocytes affords a fair inference as to the activities of the immunizing power of the organism. In other cases, however, the character of the leukocytes, as shown by the differential count, is the important factor in forming a judgment as to the disease present. Thus, in lymphatic leukemia, the number of white blood-cells may be very much reduced by treatment or otherwise, but the differential count may still show a marked predominance of lymphocytes, which indicates that the nature of the blood-picture has not changed, and in such case the disease could not be regarded as cured although the number of white blood-cells is reduced to normal or below. In order, therefore, to secure the fullest information from the counting of leukocytes, both a total and a differential count should be made.

TREATMENT OF CHLOASMA UTERINUM

To the Editor:—1. What are the approved methods of treating chloasma uterinum?

2. What results are obtained by the use of electricity or carbon dioxid snow and how are these agents used in the treatment of this disease? W. F. Ryan, M.D., Lowell, Mass.

Answer.—1. The treatment of chloasma uterinum should be a treatment of the uterine disease on which it depends. Locally, various preparations have been advised for application to the pigmented area. Most of these employ mercuric chlorid. A number of formulas for solutions and ointments containing this remedy may be found in works on dermatology. Instead of corrosive sublimate, salicylic acid may be used, 1 or 2 parts in paste or powder to 20 parts of base.

2. We find no reference to the use of electricity in the treatment of this affection. Carbon dioxid snow is not usually recommended. R. Bernstein ("Solidified Carbon Dioxid," p. 41), recommends a light application for from ten to twenty seconds without repetition. He states that there was no resulting marking of the skin of any kind whatsoever.

ARTICLES ON SURGERY OF THE MASTOID

To the Editor:—Please tell me where I can get some of the latest literature on mastoid surgery.
S. R. Edwards, M.D., Calumet, Mich.

Answer.—The following is a list of recent articles on this subject:

Philips, W.: After-Treatment of Radical Mastoid Operation, with Special Reference to Subject of Packing, *Laryngoscope*, March, 1912.
Lewis, E. B.: Cellular Changes During and After Acute Mastoiditis, with a Consideration of the Inadvisability of Certain Operative Procedures at Present Largely in Vogue. The Journal, Sept. 21, 1912, p. 1142.
Welty, C. F.: Improved Technic of the Thiersch Graft Following the Radical Ear Operation, The Journal, Sept. 16, 1911, p. 962.
Blumenthal, A.: The Question of Primary Suture after Mastoid Operation, *Deutsch. med. Wchnschr.*, Jan. 18, 1912.
Br[illegible] old Wound Following Operation, [illegible] *logy*, December, 1911.
Fr[illegible] J.: Analysis of 123 Consecutive [illegible] Were Performed for Mastoid, [illegible] Complications of Suppurative Otitis Media, *Jour. Laryngol., Rhinol. and Otol.*, March, 1912.
Ross, T. W.: Scarlet Red as Dressing After Radical Mastoid Operation, *Journal Laryngol., Rhinol. and Otol.*, April, 1913.
Richards, G. L.: So-Called Conservative Mastoid Operation with Description of Technic of Heath, Bondy and Siebenmann, *Ann. Otol., Rhinol. and Laryngol.*, September, 1911.
Cott, G. F.: One Hundred Radical Mastoidectomies, *Buffalo Med. Jour.*, December, 1911.
Oppenheimer, S.: Pro and Con of Maintenance of Retro-Auricular Opening after Radical Mastoid Operation, *Med. Rec.*, New York, November 30, 1912.
Hastings, S.: Indications of Mastoid Operation, *Practitioner*, London, November, 1912.
Wood, J. W.: After-Treatment of Mastoid Operations, *Ann. Otol., Rhinol. and Laryngol.*, September, 1913.
Loughran, R. L.: Radical Mastoid Operation, *New York Med. Journal*, Dec. 21, 1912.
Milligan, W.: Technic and After-Treatment of Radical Mastoid Operation, *Brit. Med. Jour.*, *Sept. 20, 1913.*
Amberg, E.: Facial Paralysis Complicating Suppurative Otitis Media: Atypical Mastoid Operation, *New York Med. Jour.*, July 6, 1912.
Bryant, W. S.: Modified Radical Mastoid Operation for Cure of Otitis Media Purulenta Chronica, *Med. Rec.*, New York, Nov. 16, 1912; Protective Mastoid Operation: An Operation of Election, *Surg., Gynec. and Obst.*, December, 1913.
Ingersoll, J. M.: Operative Findings and Results in Mastoiditis, *Ann. Otol., Rhinol. and Laryngol.*, September, 1913.
Hammond, P.: Technic in After-Cure of Radical Mastoid Operation, *Ann. Otol., Rhinol. and Laryngol.*, September, 1913.
Mehl, G.: Operative Treatment of Acute Mastoiditis, *Presse méd.*, Nov. 29, 1913.

STATES WHICH RECIPROCATE WITH NEW YORK

To the Editor:—What states accept a New York license to practice medicine in lieu of a written examination? M. S.

Answer.—Delaware, Indiana, Michigan, New Jersey, Ohio, Utah and Wisconsin have reciprocal relations with New York. California and Colorado, however, accept the license of any state if the candidate's qualifications are otherwise satisfactory.

ARTIFICIAL PNEUMOTHORAX

To the Editor:—Please refer me to literature on artificial pneumothorax. H. J. Cordier, M.D., Celina, Ohio.

Answer.—A list of literature on this subject was published in The Journal, Dec. 27, 1913, p. 2313.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

RETARDATION OF AMERICAN SCHOOLCHILDREN AND ITS REMEDY

In an address on this subject before the Schoolmasters' Association of New York, Dr. Charles L. Dana opposed the idea that the work imposed on boys in the schools caused nervous or mental breakdown. He recalled but one boy who broke down from study in the secondary schools, and in this instance weak eyes constituted the main trouble. He insisted, on the contrary, that not sufficient work was required, and too short time was devoted to study courses. On the question of what our system of education accomplishes, he said that the American schoolboy up to the age of 10 is apparently equal in equipment to the schoolboy of the same age in England, France and Germany, but when he reaches the age of 12 he is decidedly behind him, and when he reaches the age of 15 or 16 he is nearly two years behind. Dr. Dana quoted Mr. Burt in the *Independent* and Professor Perkins in the *Yale Review*, October, 1913, to the effect that the American schoolboy somewhere between the ages of 10 and 16 loses two years as compared with his brother of Europe. This, he said, is conceded by the National Council of Education, and it agrees with Dr. Dana's experience. His discussion referred chiefly to the work in the secondary or private schools, which he said constituted the one bright spot in our educational system between the dawdling and uncertain policies of the elementary schools and the crudity and foolishness of the American college. These boys in the secondary schools, thus retarded, were not only broken down, they were not even educated, the function of the secondary school apparently being only to fit boys for an American college, in contrast to the real work of the English public schools, the gymnasium of Germany and the lycées of France. As according to the Binet-Simon tests children three years behind in mental age are regarded as feeble-minded, Dr. Dana asks, "Are not our boys at 18 dangerously near fatuity?" He adds, "Since in an American college this mental retardation is not lessened, but as a rule increased, it follows (what many of us have long guessed) that our American graduates belong to the feeble-minded classes as measured by the B.-S. or other intelligence tests."

The National Council of Education, after long study, explains in a recent report that the inferiority of our school-children is due to the fact that the foreign pupil begins many subjects earlier, such as foreign languages, science and history; that the teacher exercises greater care of the pupils as individuals; and that there is the absence of marks and examinations, and finally a greater length of the school year. The council recommends that greater emphasis should be placed on moral training for better citizenship and a better and smaller selection of subjects and more thorough and scientific instruction in them. Dana points out that the council does not lay stress on the need of intensive study by the pupil or on the shortness of the school year, which to him are the vital points.

The American school year has from 900 to 1,000 school hours—from 185 to 200 school days of five hours each—while the German school is 1,400 hours, 270 days, five, five and a half or even six days a week. The same is true in France and England. This short American school year is often still shorter in the secondary schools, in instances hardly more than 150 days. The European boy at the age of 10 is made to work steadily and intensively. The American boy can do it if he chooses, but is under no compulsion; hence retardation, lack of interest and superficiality. He believes that this is brought about by a sort of sickly sentimentality toward the growing boy on the part of American parents. The idea is prevalent that study is a dangerous thing for a boy, and that hard mental work should be given him under the most careful conditions.

This idea, Dr. Dana believes, is entirely wrong; mental work is not only healthful for a growing child, but it is absolutely beneficial. Nothing is so important for him as to be impelled to do hard work and to finish thoroughly a given task. If he works with the idea that he should stop the minute the sensation of ennui comes on him he will never be thorough or effective. He should, of course, work wisely. The brain is the best protected organ of the body. This organ and all its tissues rests one-third of the day, while all the other organs, even the muscles, are doing some work every hour. The brain receives more blood per cubic centimeter than any other organ, and is protected physiologically against overwork by the feeling of ennui; more than any other organ it responds to exercise and training and has within it more potentialities of development than any other tissue. Given a healthy child, working and living in proper surroundings, there is really no limit to the mental work which can be obtained from him by judicious pedagogics. The European idea is that after the age of 10 a child is able to do hard work and ought to do it. The American idea is that it is able to do some work and ought to be persuaded to do it.

Dr. Dana endorses the general plan of the National Council of Education that the child shall finish his elementary education at 12; between 12 and 16 he shall be advanced so that at 16 he is able to enter a vocational school where he will finish his education at the age of 20; or he will enter a small college and finish his training in the arts; or he will enter a regular college at 18, being so equipped that he will finish the liberal course in two years and begin his professional course in medicine or law at 20 and graduate at 24. This work must be initiated in the elementary schools, but a large part of it must be done in the high schools and preparatory schools.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, April 7. Sec., Dr. John Wix Thomas, Phoenix.
Colorado: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
Idaho: Wallace, April 7. Sec., Dr. John F. Schmershall, Jerome.
Minnesota: Minneapolis, April 7-10. Sec., Dr. Thomas McDavitt, 814 Lowry Bldg., St. Paul.
Montana: Helena, April 7. Sec., Dr. Wm. C. Riddell, Helena.
New Mexico: Santa Fe, April 13. Sec., Dr. W. E. Kaser, East Las Vegas.
Oklahoma: Oklahoma City, April 14. Sec., Dr. John W. Duke, Guthrie.
Rhode Island: Providence, April 2. Sec., Dr. Gardner T. Swarts, Room 315, State House, Providence.
Utah: Salt Lake City, April 6-7. Sec., Dr. G. F. Harding, 403 Templeton Bldg., Salt Lake City.
West Virginia: Charleston, April 21. Sec., Dr. S. L. Jepson, 81-12th St., Wheeling.

STATES REQUIRING HIGHER PRELIMINARY EDUCATION

An official communication states that after Jan. 1, 1915, the Arkansas State Medical Board will require all students entering on the study of medicine in that state to have completed one year of college work, including courses in physics, chemistry, biology and a modern language, in addition to a standard four-year high-school education. This requirement will apply to all applicants for licenses granted by this board giving the right to practice medicine in Arkansas who graduate in 1919 and thereafter.

There are now sixteen states which have adopted requirements of preliminary education in addition to a standard four-year high-school education. These states, the number of college years required and the time the higher requirement becomes effective are as follows:

State Examining Board of—	No. of Years Required	Affects Students Matriculating	Affects All Applicants
Minnesota	2	1908-09	1912
North Dakota	2	1908-09	1912
Colorado	2	1910-11	1914
Connecticut	1	1910-11	1914
Kansas	1	1910-11	1914
Indiana	2	1910-11	1914
Utah	1	1910-11	1914
Iowa	2	1911-12	1915
South Dakota	2	1911-12	1915
Vermont	1	1912-13	1916
Pennsylvania	1	1913-14	1917
Kentucky	2	1914-15	1918
Michigan	1	1914-15	1918
Rhode Island	1	1914-15	1918
Arkansas	1	1915-16	1919
California	1	1915-16	1919

Kansas June Report

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, June 10-12, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 82, including one who had been previously licensed without examination, of whom 78 passed, including the candidate previously licensed, and 4 failed. Seventeen candidates were licensed through reciprocity. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
University of Arkansas	(1913)	78
Chicago College of Med. and Surg	(1912) (1913)	78 75.6, 79, 84.6, 86.
Hahnemann Med. College and Hosp., Chicago	(1913)	84
Rush Medical College	(1913)	83
Kansas Medical College	(1913)	75, 75, 75, 75, 75, 76, 76.5, 78.9, 79, 79, 80, 80, 80, 81, 81, 81.8, 81.8. 84, 84, 85, 85, 89.8.
University of Kansas	(1913)	76, 79, 81, 83, 83, 84.8, 86.
University of Louisville	(1913)	86.9
Flint Medical College	(1904)	75
Ensworth Medical College	(1913)	75
Kansas City Hahnemann Medical College	(1910) (1913)	80.9 77, 80, 82, 84.
St. Louis University	(1913)	77, 80
University Medical College, Kansas City	(1913)	76, 76.6, 76.9, 77, 79, 79, 79, 81. 81. 81, 81.9, 82, 83, 83, 83, 83, 84.9, 85, 85, 85, 87, 87.

Columbia Univ., Coll. of Phys. and Surgs., N. Y.	(1913)	83
Long Island College Hospital	(1908)	83
Meharry Medical College (1913) 75, 76, 77, 79, 80, 84.8.		

FAILED

American Medical College	(1911)	67.5
Ensworth Medical College	(1909)	45.9
University Medical College, Kansas City	(1913)	70
University of Tennessee	(1913)	72.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1912)	Illinois
College of Physicians and Surgeons, Chicago	(1911)	Illinois
State University of Iowa, College of Medicine	(1908)	Illinois
Kansas Medical College	(1898)	Nebraska
University of Kansas	(1911)	Missouri
Hospital College of Medicine, Louisville	(1906)	Kentucky
Barnes Medical College	(1901)	Missouri
Columbian Medical College, Kansas City	(1900)	Missouri
Ensworth Medical College	(1911)	Nebraska
University Medical College, Kansas City (1910) Missouri; (1911) Missouri; (1912) Missouri.		
John A. Creighton Medical College	(1912)	Nebraska
Eclectic Medical College of New York City	(1891)	Nebraska
Western Reserve University	(1903)	Ohio
Meharry Medical College	(1911)	Virginia

South Carolina June and November Reports

Dr. A. Earle Boozer, secretary of the State Board of Medical Examiners of South Carolina, reports the written examinations held at Columbia, June 10 and Nov. 11-13, 1913. At the June examination the number of subjects examined in was 13; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 121, including 5 osteopaths, of whom 81 passed, including 4 osteopaths, and 40 failed, including 1 osteopath. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University (1912) 75.9, 78, 81.6.		
Atlanta College of Physicians and Surgeons (1908) 75; (1913) 76.5, 77.2, 78.7, 83.9, 86.6.		
Atlanta School of Medicine	(1913)	75, 79.4
University of Georgia (1911) 75.4;	(1913)	81.4, 91
Baltimore Medical College (1911) 88.2;	(1913)	85.6
College of Physicians and Surgeons, Baltimore	(1910)	80.2
Johns Hopkins University (1904) 85.2;	(1910)	89.5
University of Maryland (1910) 83.5; (1913) 83.2, 83.4, 84.2, 87.1.		
College of Physicians and Surgeons, Boston	(1912)	75.6
University of Michigan, College of Med. and Surg.	(1911)	82.9
Albany Medical College	(1912)	87
Columbia Univ., Coll. of Phys. and Surgs., N. Y.	(1913)	90.5
Leonard Medical School (1913) 76.6, 79.3, 79.4.		
North Carolina Medical College	(1913)	77.5
Jefferson Medical College	(1913)	86.2, 89.2
Medico-Chirurgical College of Philadelphia	(1906)	79
University of Pennsylvania	(1912)	86.1
Woman's Medical College of Penna. (1899) 81;	(1911)	84.1
Medical College of State of South Carolina (1911) 75; (1912) 75.5, 75.9, 77.2, 77.4, 79.5; (1913) 75.1, 77, 77.4, 77.9, 78, 78.2, 78.5, 78.6, 79.4, 79.5, 79.5, 79.7, 80.2, 80.4, 80.6, 80.9, 80.9, 81.4, 82.1, 83.1, 84, 84.4, 84.7, 85.5, 86.6, 87, 92.1, 92.5.		
Lincoln Memorial University	(1912)	75.1, 82.4
Meharry Medical College	(1912)	77.4, 78.5
Vanderbilt University	(1913)	84.7

FAILED

College	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons (1913) 62, 62.8, 71.9.		
Atlanta School of Medicine	(1913)	69.4
Georgia College of Eclectic Medicine and Surg.	(1912)	64.5
South. Coll. of Med & Surg., Atlanta (1912) 66.4;	(1913)	28.4
University of Georgia (1911) 64.9; (1912) 57;	(1913)	70.8
Chicago College of Medicine and Surgery	(1913)	75*
Indiana University	(1909)	45.5
University of Louisville	(1911)	64.9
Maryland Medical College (1905) †;	(1912)	72.5
University of Maryland (1897) 67.9;	(1909)	70.2
Leonard Medical School (1905) 64.8; (1906) 74.6; (1910) 72.9; (1912) 41; (1913) 71.9, 75.9.‡		
North Carolina Medical College	(1912)	65.8
Medical College of State of South Carolina (1908) 70.4; (1909) †; (1911) 62.1, 69.6; (1912) 66.3; (1913) 61.8, 62.9.		
Meharry Medical College (1909) 71.5;	(1911)	65.8
Memphis Hosp. Med. Coll. (1911) 51.8, 52.5;	(1913)	59.8
University of West Tennessee	(1913)	43.9, 60.5
Gate City Medical College§	(1909)	68.6

* Could not fulfil requirements.

† Examination not completed.

‡ Fell below 60 in one subject.

§ This school was caught selling diplomas in 1911; its dean was convicted and sentenced to fifteen months' imprisonment.

At the examination held Nov. 11-13, 1913, the number of subjects examined in was 13; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 45, including 1 osteopath, of whom 23 passed, including 1 osteopath, and 22 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Alabama	(1913)	82.6
Atlanta College of Physicians and Surgeons	(1913)	75.1
Atlanta School of Medicine	(1910)	78.8
University of Georgia	(1913)	75.2
Chicago College of Medicine and Surgery	(1913)	77.4
University of Louisville	(1911)	75.6
Maryland Medical College	(1912)	79.1
University of Maryland	(1897)	78.5
Boston University	(1913)	82.1, 82.4
College of Physicians and Surgeons, Boston	(1913)	78
Leonard Med. School (1906) 77.8; (1910) 76.5;	(1913)	78.1, 78.2
North Carolina Medical College	(1913)	75.6, 75.9
Med. Coll. of State of S. Carolina (1908) 76.5;	(1912)	76.4, 79.8
University of Virginia (1911) 80.5;	(1912)	75

FAILED

College	Year Grad.	Per Cent.
South. Coll. of Med. & Surg., Atlanta (1912) 71.8;	(1913)	55.5
Indiana University	(1909)	69.1
Maryland Medical College (1905) *;	(1912)	66.6
Leonard Medical School (1912) *;	(1913)	69.6
North Carolina Medical College (1903)*;	(1912)	68.9, 69.2
Jefferson Medical College	(1898)	72.2
Med. Coll. of State of S. Carolina (1911) 62.4;	(1913)	70.8, 71.2
Meharry Medical College (1909) *; (1911) 63.1;	(1913)	*
Memphis Hospital Medical College (1911) *;	(1913)	56
University of West Tennessee	(1913)	54.1
Vanderbilt University	(1899)	67
Gate City Medical College†	(1909)	64.5

* Examination not completed

† This school was caught selling diplomas in 1911; its dean was convicted and sentenced to fifteen months' imprisonment.

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Baltimore	(1912)	W. Virginia
Johns Hopkins University	(1912)	Maryland
University of Maryland	(1912)	Maryland
University of Pennsylvania	(1902)	W. Virginia

Idaho October Report

Dr. J. F. Schmershall, secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Boise, Oct. 7, 1913. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 17, of whom 13 passed and 2 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Loyola University Med. Dept.	(1880)	80
Chicago College of Medicine and Surgery	(1913)	79.6
Northwestern University Medical School	(1906)	89
Rush Medical College	(1894)	77.5
Medical College of Indiana	(1905)	85
Johns Hopkins University	(1910)	82.8
University of Michigan (1882) 91;	(1903)	91
University of Oregon	(1908)	76.7
Willamette University	(1877)	93
Medico-Chirurgical College of Philadelphia	(1913)	81.7
Vanderbilt University (1912) 77.6;	(1913).	83.2

FAILED

College	Year Grad.	Per Cent.
Jenner Medical College	(1897)	69.9
Ensworth Medical College	(1908)	72

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1900)	Utah
St. Louis University	(1909)	Utah

Ohio January Reciprocity Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports that 21 candidates were licensed through reciprocity, Jan. 6, 1914. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1912)	Dist. Colum.
College of Physicians and Surgeons, Chicago	(1887)	Iowa
Hahnemann Medical College and Hosp., Chicago	(1910)	Illinois
Chicago Medical College	(1900)	Illinois
Northwestern University	(1907)	Illinois
Indiana University	(1908)	Indiana
University of Louisville	(1912)	Kentucky
Baltimore Medical College	(1898)	New York
Johns Hopkins University	(1912)	Wisconsin
University of Maryland	(1897)	W. Virginia
University of Michigan (1910) Michigan; (1912) Michigan; (1913) Michigan.		
Cornell University	(1908)	New York
University of Buffalo	(1903)	New York
Jefferson Medical College	(1912)	Maryland
University of Pennsylvania	(1911)	New Jersey
University of Pittsburgh (1908) Pennsylvania; (1912) W. Virginia; (1913) Pennsylvania.		
University of Vermont	(1912)	Vermont

Book Notices

An Introduction to the History of Medicine with Medical Chronology, Bibliographic Data and Test Questions. By Fielding H. Garrison, A.B., M.D., Principal Assistant Librarian, Surgeon General's Office, Washington. Cloth. Price, $7.50 net. Pp. 763, with illustrations. Philadelphia: W. B. Saunders Company, 1913.

This interesting and in many respects novel history of medicine begins with a discussion of the identity of all forms of ancient and primitive medicine, which are shown to differ only in unimportant details. Then come chapters on Egyptian, Sumerian and Oriental and Greek medicine; on the medicine of the Byzantine, Mohammedan and Jewish periods, the medieval period, the Renaissance and the seventeenth, eighteenth, nineteenth and twentieth centuries. In addition to the usual data, which are presented in a most pleasing manner, special attention is given to the social and cultural aspects of medicine in the various periods. About half of the text is devoted to the modern period, that is, from the beginning of the nineteenth century to the present time. At the end are appendixes covering medical chronology, bibliographic notes for collateral reading, and a list of test questions. The latter are certain to awaken interest, as an attempt to answer them will reveal how very little most of us really know of medical history. There are complete indexes of subjects as well as of names. Most attractive are the many portraits which have been selected with great care, the biographic data and the luminous characterizations of the leaders in medicine of the different periods.

As stated, the modern period is treated very fully, and American conditions and physicians receive due consideration. Perhaps there is room for the remark that the Middle and Western parts of this country are not so well represented as the Eastern. One wonders, for instance, why no mention is made of men like Daniel Brainerd and Christian Fenger, and very little is said about the development of the medical institutions in these regions. On the other hand, when one considers the wealth of facts printed, the wonder is that so few serious mistakes and omissions have been made. While compact and crowded with facts, every page illustrating the learning and accuracy of the author, it is in no sense a dull book but pleasant reading throughout, clear and concise, rich in happy phrases, apt quotations, with occasional flashes of humor, and many historical and cultural allusions. It has the "genuine flavor of letters," inspires interest in its subject and merits the widest popularity.

The American Encyclopedia and Dictionary of Ophthalmology. Edited by Casey A. Wood, M.D., C.M., D.C.L., Professor of Ophthalmology, College of Medicine, University of Illinois, Assisted by a Large Staff of Collaborators. Volume II. B to Cataract, Incipient. Cloth. Price, $6. Pp. 729-1505, with illustrations. Chicago: Cleveland Press, 1913.

The character of the encyclopedia as established in the first volume is well sustained in the succeeding portion of this ambitious work. The article by McKee on the bacteriology of the eye and by Beard on blepharoplasty are among the leading and valuable articles in this volume. The articles on the brain and brain tumor by Halstead are of exceeding interest; they represent a comparatively recent extension of the field into which the ophthalmic surgeon must eventually become more actively interested in his surgical work, so that it should be well covered in a book of this character. Two interesting articles of considerable length are those on the blind and on the prevention of blindness, and on the comparative anatomy and histology of the eyes of birds. The former article, in addition to a discussion statistical and otherwise of the usual causes of blindness, takes up the prevention of blindness in industrial pursuits by means of protective glasses, protecting devices for machines, etc. It requires some effort to adjust oneself to the idea of an encyclopedia made up largely of signed monographs with the constantly recurring personal pronoun and expression of opinion and discussion of theory rather than plain, dogmatic statement. Encyclopedic medical biography which contains description of dress, anecdote, quotation and classical allusion are also unusual. The quotation of a portion of one of Dr. Weir Mitchell's novels to illustrate a point is likewise an innovation in encyclopedic medical literature. The editor has anticipated a criticism in regard to the dictionary feature of the work when he says in his introduction to the first volume that the setting forth of so many foreign words might be regarded as padding. It is said that many foreign words which have equivalents in English which are very similar in form have been omitted. It is believed that many more might have been omitted without detriment, especially the words, of which there are not a few, which seem to have no connection with ophthalmology. This applies also to the description or mention of certain bacteria with no reference to their rôle in ophthalmic pathology. The monographs are for the most part excellent and informing. A few of the contributors seem not to have caught the spirit of scientific enthusiasm which forms the key-note of the work, but on the whole the second volume, with its abundant illustrations, forms a worthy part of this monumental and representative American book on ophthalmology.

Spätpsychosen katatoner Art. Eine klinische Studie. Von Dr. Maurycy Urstein, Warschau. Paper. Price, 18 marks. Pp. 440. New York: Rebman Co., 1913.

Under the title "Late Catatonia" the author classifies cases of catatonia which begin in the fifth and sixth decades: that period of life when regressive changes first become marked. Late catatonia does not differ essentially in its clinical manifestations from catatonia developing in early years. It is much more frequent in women than in men. The influence of the menopause, woman's entrance into the period known to be dangerous, loss of her sexual functions, and the changes in the internal secretions of the ovaries, all have a power to affect her mentally. The physical diseases and discomforts which come to many women at this time increase the mental distress. The degree of distress depends largely on the character of the mind acted on. This in turn is strongly influenced by the character of the woman's earlier life: the success of her marriage, freedom from too much stress and strain, etc.

Those traits in the younger woman which lead her to be considered as eccentric, jealous or emotionally unstable are apt, under the strain of the menopause, to develop to such a degree as to constitute an actual psychosis. Psychoses which in earlier life are of the hebephrenic, paranoiac or circular type, are apt, with the menopause, to take on a catatonic type. The author advances the theory that the *Geschlechtszellen*, the cells of the sex-organs, produce a hormone whose absence causes a disturbance of the general organism.

An interesting chapter is that which treats of the relation between age and the forms of psychoses: a psychosis developing at any age is colored by the psyche peculiar to that age. A most valuable part of the book is that which gives the descriptive histories of the forty cases that are cited in full. The reader is given an excellent insight into the material which the author uses to develop his theories. The book is a valuable addition to the literature of the psychoses.

Tumours. By Charles Powell White, M.D., F.R.C.S., Director, Pilkington Cancer Research Fund. The Pathology of Growth, Vol. I. Cloth. Price $3.50 net. Pp. 235, with 88 illustrations. New York: Paul B. Hoeber, 1913.

From the title page one gains the impression that this book constitutes the first volume of a series of text-books of pathology, edited by A. E. Boycott; but no definite statement to this effect is forthcoming. The volume contains a concise discussion of the subject of tumors, both as to their general characters and their special forms. There is no consideration of their clinical features, their general effects on the individual, or their relation to different viscera. The amount of information given in a small space is large, and it is reliable. Perhaps the best chapter is on the etiology of tumors, which is to be recommended for its sanity. No attempt is made to inspire the student to independent thinking or research, or to lead him to do outside reading. The illustrations are practically all from photomicrographs, and it is doubtful if, in most instances, they will be very enlightening to the inexperienced student, for whom the book is evidently intended.

Miscellany

The Present Status of Tuberculin

In the Transactions of the British National Association for the Prevention of Consumption and Other Forms of Tuberculosis (Great Britain), appears the report of a symposium on tuberculin held at the fifth annual conference of the association. Among those participating in this symposium were Hector W. G. Mackenzie, G. Sims Woodhead, Lydia Rabinowitsch-Kempner, Edmond Béraneck, Sahli, Nathan Raw, William Charles White, Noel D. Bardswell, Sir James K. Fowler, Sir R. W. Philip, Sir St. Clair Thomson, E. Rist, John Rennie, O. Amrein and Pannwitz. Although the discussion presented a variety of opinions on some points, there was a close agreement on several phases of the subject. The more important topics are here briefly presented:

LACK OF EXPERIMENTAL EVIDENCE

It is a remarkable fact that notwithstanding the great scientific genius of its discoverer, tuberculin has never been placed on a scientific basis through satisfactory experimental results. This has been pointed out by Batty-Shaw (The Present Evidence for and against the Use of Tuberculins as a Specific Cure, *Brit. Med. Jour.*, May 3, 1913, p. 921) and is confirmed by Rabinowitsch and Mackenzie. Mackenzie states that Koch passed over the action of tuberculin in animals and afterward dwelt on its extraordinary effects in tuberculosis in man. He asks whether any one has been able to obtain the cure by means of tuberculin injections of the tuberculous ulcer occurring at the site of the primary inoculation puncture. Rabinowitsch refers to this question and states that the majority of reports bearing on the treatment of experimental tuberculosis by tuberculin are unfavorable. It is well known that large doses of tuberculin will kill tuberculous guinea-pigs promptly. Rabinowitsch used small doses, beginning ten days after the infection of the animals. From the results as a whole, it was evident that no curative influence had been exercised by the tuberculin. The control animals sometimes lived longer than the treated animals.

TUBERCULIN REACTION ACCOMPANIED BY BACILLI IN THE BLOOD

Rabinowitsch also made the important discovery that tuberculin sufficient to produce a general reaction causes virulent tubercle bacilli to enter the blood and thus tends to disseminate the disease. This finding is confirmed by the observations of Bachmeister on human subjects. In four out of fifteen cases, blood, taken from patients at the height of the feverish reaction following the diagnostic use of tuberculin, produced tuberculosis in animals injected with it. The blood of each of the four patients taken before the use of tuberculin gave negative results when injected. It is evident that much caution should be used in the employment of tuberculin even for diagnostic purposes.

Rabinowitsch thinks that tubercle bacilli may be caused to enter the blood-stream not only by the injection of tuberculin, but also by the use of chemotherapeutic preparations. It appears that the most diverse irritants, when acting on the tuberculous organisms, favor the entrance of bacilli into the circulation.

DIFFICULTY OF INTERPRETING THE CLINICAL EVIDENCE

The determination of the clinical usefulness of tuberculin has proved especially difficult. Mackenzie, after a considerable experience, still feels uncertain as to its value. In his opinion it is still on trial. He says, "When all is said and done, we have to acknowledge that the results of it are not brilliant, certainly not convincing."

In various papers, conclusions from clinical experience are expressed with a varying degree of confidence. Some are quite enthusiastic, others very conservative. As an illustration of the difficulty of estimating the curative influence of tuberculin, Bardswell says, "The good effect of tuberculin is at best exerted almost imperceptibly, and over a long period, the slowness of its action being such that it is often difficult to determine, as regards patients under the most favorable and hygienic conditions, how much, if any, of the improvement that takes place is due to its use." Further, he says, "Tuberculin cannot be looked on as a means whereby an unfavorable case can be converted into a favorable one, or as likely to turn the scale in the patient's favor when his progress is hesitating or definitely retrogressive. More often than not it will do harm."

In some cases results more favorable than those obtained in ordinary sanatorium cases were reported; but these results were in selected patients and there are no records of similarly selected patients under ordinary sanatorium treatment. The selection of cases favorable for tuberculin treatment and the exclusion of those less favorable, therefore, introduces a serious element of fallacy.

Rist says that he has "never seen a patient doing well under tuberculin without remaining in doubt whether he would not have done as well without tuberculin." He still gives it to some patients for a subjective effect.

PSYCHIC INFLUENCE

One reason for the better results obtained under tuberculin than under the ordinary sanatorium treatment alone may be found in the effect of psychic influence. Dr. Gebser says, "A great number of tuberculin successes seem to me to be explicable by psychologic processes. People who submit themselves to tuberculin treatment mostly feel well-disposed to it and also possess the necessary qualities of character to behave rationally; to this fact they for the most part owe their improvement in health."

UNFAVORABLE OPINIONS

Schudt, Henssen, Wolff and Brauer take a skeptical attitude as to the therapeutic value of tuberculin.

Thomson reports a most discouraging experience with this remedy in laryngeal tuberculosis. He says: "All that tuberculin appears to do or that one can allow that it may do is to slightly assist the promising cases. After all can its most enthusiastic supporters ever expect more of it? It is often referred to as a remedy by those of little understanding. We know it is no remedy."

In Thomson's opinion, so far as the larynx is concerned, tuberculin may do much harm in unskilled hands; in most cases its good effects are not obvious; in a few it may be helpful.

FAVORABLE OPINIONS

Rennie, Amrein and Morland speak favorably of the use of tuberculin in their experience.

Sims Woodhead maintains that tuberculin is a powerful agent, potent both for good and for evil, and must be used with great care. The only safe method of administering tuberculin treatment is to avoid all but minimal reactions. Otherwise it may do more harm than good. It has never yet conferred complete immunity to tuberculosis either in man or in animals.

SELECTION OF CASES

Without selection of cases tuberculin treatment is impossible. The susceptibility of various individuals to tuberculin varies, according to White, to such an extent that to produce the same effect in two individuals may require two hundred times as much tuberculin in one case as in the other. There are many cases in which it is distinctly contra-indicated.

While some authors contend that tuberculin treatment is not necessarily contra-indicated by fever, Rist insists that one must first exclude patients who are in a febrile condition. This class includes the great majority of the progressive cases. Rist has had no success with tuberculin in the nonfebrile progressive cases in which he has used it.

Philip thinks highly of tuberculin, but its success, he believes, rests largely on the patient's potential of recovery. The hope of successful treatment is greatly enhanced if the lesion is local. For this reason surgical tuberculosis, and glandular and skin lesions give much better results with this remedy than pulmonary tuberculosis. "In order that tuberculin may be effective, treatment must be begun sufficiently early. The defensive mechanism of the individual must still be capable of ready response to stimulation."

According to Woodhead, three main considerations are to be decided when we are doubtful as to whether or not we should use tuberculin:

1. Are the tissues well nourished and the functions well maintained.

2. Are bacilli already present and accessible in sufficient numbers to provoke the therapeutic reaction of the organism?

3. Is it safe to induce any lytic action on these bacilli in the present condition of the patient?

EFFECT OF LOCAL TUBERCULOSIS

Better results are usually obtained from tuberculin in the treatment of localized tuberculosis than from its use in general infections. Sahli says, "All localized tuberculosis is suitable for tuberculin treatment, provided that the patient's system is not already overloaded with tuberculin, and he is, therefore, too seriously ill."

According to Raw, "This valuable and powerful remedy gives us the best results in the treatment of tuberculous glands. The infection, being of bovine origin, requires for its treatment a tuberculin prepared from human bacilli, as more complete immunity seems to be produced in the human body by using opposite tuberculins."

Raw regards tuberculin as a remedy of the greatest value, especially in early cases and when the deposit of tubercle is localized, as in one apex of a lung or in a lymph-node or single joint; but when the tuberculosis is disseminated and complicated by secondary infections the use of tuberculin cannot be expected to be of much avail.

Philip says: "In proportion as the disease is localized the hope of successful treatment by tuberculin is increased. In a case of early tuberculous infection, when the process is limited to the lymphatic system, or in a case where, with further advance, the disease is still for the most part localized and the systemic disturbance is relatively slight, the well-regulated use of tuberculin affects the patient favorably and in many cases leads to cure."

Rist points out that tuberculin acts favorably on certain skin lesions, but is of little use in tuberculosis of the lungs.

TUBERCULIN IN GERMANY

In an appendix to the report Pannwitz, secretary of the International Antituberculosis Association, presents a summary of the views of prominent German specialists. According to Pannwitz, tuberculin is extensively used in Germany and is popular. He points out, however, that the number of doubters is increasing, and in evidence of this fact he notes that the search for new tuberculin preparations never ceases. A considerable number of the German specialists quoted express a favorable opinion and state that the hygienic sanatorium treatment combined with the use of tuberculin is more effective than the sanatorium treatment alone. When tuberculin injections are given, it is asserted that the patients are more easily controlled and especially can be persuaded to continue the treatment longer than if they are merely urged to continue simple hygienic and dietetic measures.

From reading these papers the following impressions are gained:

1. Tuberculin is not holding the position which was accorded to it after its recovery from the depression due to its early incautious use. It is not in itself curative, but it is, at most, a stimulant to the curative efforts of the organism. Some observers are still of the opinion that it is of value in selected cases of tuberculosis.

2. The potency of tuberculin for harm is recognized by all. Its administration requires careful selection of the case, close observation of the patient and appropriate regulation of the dose. Patients should be treated in a hospital, or, if the remedy is administered to ambulant patients, a strict control should be exercised.

3. Tuberculin is effective only in strictly localized forms of tuberculosis. Hence, the results are good in the forms of tuberculosis called surgical, such as affect the skin, bones, joints and lymph-nodes. Tuberculosis of the lungs, when strictly localized, would appear to indicate its use, but the different character of the tissue involved seems to render the results less favorable.

Full-Time Health Officers

The importance in local health administration and in the advancement of rural hygiene of the full-time county health officer is emphasized in an address by Dr. Louis I. Dublin before the state conference on health officers of Kentucky, printed in *Public Health Reports*, Jan. 2, 1914. After discussing the opportunity of Kentucky to employ full-time rural health officers on account of the even distribution of the population in the various counties, he summed up the need for, the qualifications and the opportunities of, full-time health officers as follows:

The health officer should be one whose sole interest is in the community to the exclusion of private interest. The occasion should no longer arise when a health officer may be tempted by personal considerations to neglect common needs. He should never find it necessary to compete with those whom it is his sworn duty to supervise. As to his qualifications, he should be well trained in the modern science of sanitation and public health. The average physician is not equipped to fill this office. The protection of the public health has now been conceived as a science with its own data and formulas. Special postgraduate courses are provided for the training of such men. Experience is also a good school for health officers, but ultimately provision should be made that health officers shall be holders of a diploma in public health. The tenure of office of such full-time health officers should be coextensive with efficient service. Every year of service makes them of greater value to the state, and the office should not be a pawn in the political game. They should be reasonably compensated for their services. It is folly to set high standards and to make them impossible of attainment through inadequate compensation or uncertainty of tenure of office. The salaries must be adequate to attract able men.

As to some of the problems of a full-time health officer in Kentucky, Dublin points out that in 1911 the death-rate from tuberculosis in Kentucky was 229.3 per hundred thousand, while in the registration states, which include the centers of investigation, the rate was 155.6 per hundred thousand. This would constitute one of the first problems of a full-time health officer, and a reduction of the death-rate from this disease to the average of the states in the registration area would save 1,700 lives annually in the state of Kentucky, largely of men and women in their prime whose money value to the state would be more than enough to compensate for the additional cost of the health work.

Another problem in Kentucky is the typhoid fever rate, which in 1911 was 46.3 per cent. as compared with 20.4 in the registration states. Typhoid fever to the health engineer is an unerring indication of a polluted water-supply, infected food products and unsupervised typhoid carriers, which are a constant menace to the entire state through milk and food-supply. The full-time health officer supported by the community would soon earn many times his cost in reducing the amount of typhoid. The activities of the full-time health officer would also include the reduction in the death-rate from preventable disease, which in 1912 in Kentucky amounted to 39.5 per cent. of the total death-rate, or 12,000 deaths and many more cases of sickness in the course of a year. Dublin further states that one of the most remunerative fields for the activity of the full-time health officer would be his active work in child hygiene, in cooperation with the school authorities. If there were no better excuse than the need for some local authority to carry on intelligent child hygiene work in each community, this would be sufficient for the appointment of full-time health officers, as it is during the period of child life that the foundation is laid for the physique which will determine largely the usefulness and longevity of the future citizens.

Medicolegal

Waiver of Privilege Procured By Fraud

(Kloppenburg vs. Minneapolis, St. Paul & Sault Ste. Marie Railway Co. (Minn.), 143 N. W. R. 322)

The Supreme Court of Minnesota holds that where it appears that a waiver of the privilege under the statute of that state relating to matters learned by physicians during professional attendance on their patients was procured by fraud or misrepresentation, it is not error to disregard it and to allow the privilege to be claimed.

Law Providing for Sterilization of Epileptics in Charitable Institutions Not Constitutional

(Smith vs. Board of Examiners of Feeble-Minded (N. J.), 88 Atl. R. 963)

The Supreme Court of New Jersey holds unconstitutional, as to epileptics in charitable institutions, the statute of 1911 of that state, authorizing and providing for the sterilization of feeble-minded (including idiots, imbeciles and morons), epileptics, rapists, certain criminals and other defectives. The court says that the application of the statute to criminals did not concern it in this case, as the prosecutrix was an epileptic, an unfortunate person, but not a criminal.

The board of examiners created by the statute made an order which, after reciting that Alice Smith was an epileptic inmate of a state charitable institution, that procreation by her was inadvisable, and that there was no probability that her condition would improve to such an extent as to render procreation by her advisable, ordered that an operation of salpingectomy be performed on her. She fell within the classification of the statute in that she was an inmate of the State Village of Epileptics, of which she had been an inmate since 1902. She had had no attack of the disease for the five years last past.

The court after stating that the statute is broad enough to authorize an operation for the sterilization of an epileptic, discusses the nature and dangers of such an operation and says it must be performed by force, at least to the extent of the production of anesthesia which would destroy all liberty of will or action, and that it would threaten the life, and certainly the liberty, of the individual in a manner forbidden by both the state and federal constitutions, unless it were a valid exercise of the police power. The question presented is therefore not one of those constitutional questions that are primarily addressed to the legislature, but a purely legal question of police power, which is a matter for determination by the courts. The police power is defined as the power in the legislature to enact and enforce whatever regulations are in its judgment demanded for the welfare of society at large in order to secure or guard its order, safety, health, or morals. The case in hand raises the very important and novel question whether it is one of the attributes of government to essay the theoretical improvement of society by destroying the function of procreation in certain of its members who are not malefactors against its laws. The court says that the feeble-minded and epileptics are not the only persons in the community whose elimination as undesirable citizens would, or might in the judgment of the legislature, be a distinct benefit to society, and if the enforced sterility of this class be a legitimate exercise of governmental power, a wide field of legislative activity and duty is thrown open to which it would be difficult to assign a legal limit. Passing the discussion of these questions, the court bases its decision in this case on the ground that the statute makes an unconstitutional classification with reference to epileptics, in that it applies only to epileptics who are "inmates confined in the several charitable institutions in the counties and state." The court states that a further objection is that the law, when taking into consideration the magnitude of the purpose in view, which is nothing less than the artificial improvement of society at large, is singularly inept, inasmuch as it does not apply to the much larger class of epileptics who are not confined in the county and state institutions and are vastly more exposed to the temptation and opportunity of procreation, to the much greater injury of society. The suggestion that the classification might be sufficient if the scheme of the statute were to turn the sterilized inmates of the institutions loose on the community, the court dismisses as not worthy of serious consideration.

Malpractice Liability in Incidental Treatment of Felon for Domestic

(Peterson vs. Phelps (Minn.), 143 N. W. R. 793)

The Supreme Court of Minnesota affirms an order denying the defendant a new trial after the plaintiff had recovered a verdict against him for malpractice. The court says that the close question of fact was the defendant's employment. There was no direct request to treat the plaintiff's finger, no promise of payment for services, and apparently no expectation thereof on the part of the defendant. He had been called to attend the wife of a farmer in whose home the plaintiff was employed as a domestic. As the defendant was leaving the house, having attended to his patient, he found the plaintiff near the door where she and her employer had been discussing her aching finger, and one of them asked the defendant if he thought the trouble was a felon. After looking at it, he gave his opinion that it was not, and suggested salt pork as an application. The next time he visited the house he examined the finger, opened it with a needle, and gave directions to continue the use of salt pork. The last time, after attending to the patient on whose account he made these three visits, he again inquired about the finger, was informed that it felt worse, examined it, and advised that some one open it with a needle. This was virtually the plaintiff's whole claim as to the defendant's acceptance of her as a patient. He denied that he ever used a needle, examined, or prescribed for the finger, except that he gave it a look on the first visit; but the jury having adopted the plaintiff's version, and their finding having been approved by the trial court, the supreme court must also accept her testimony as the truth.

The verdict, so far as it embodied a conclusion that the defendant was guilty of malpractice and that the loss of the plaintiff's finger resulted therefrom, was amply supported by the evidence, and it must also be held that the evidence sufficiently established that the plaintiff became a patient of the defendant and was entitled to receive such treatment as the physician possessed of the ordinary care and skill would give.

If the defendant undertook to diagnose, treat, or prescribe for the ailment, his responsibility for failure to possess and use the skill and care of the ordinary physician was not dependent on an express agreement of employment or promise to pay for the services. If he undertook to render services, the law implied an agreement to pay therefor. It has also been held that even as to charity patients and those whose treatment is undertaken without the expectation of pay, the physician must possess the skill and use the care of the ordinary practitioner. The defendant was on a professional visit in the home where the plaintiff was one of the household. She was suffering; the pain interfered with her employment. The head of the house directly or impliedly asked the defendant to examine the finger. Under these conditions his acts in attending to the plaintiff's suffering became quite persuasive of the relation of physician and patient between the two. The jury might well conclude that the plaintiff understood, and had a right so to do, that she was in the hands of a physician who would properly treat the ailment.

In an action for malpractice, in which it is alleged that the defendant did not use skill and care in diagnosing and treating a felon on the plaintiff's finger, and that he did not make the necessary and proper incision in the finger, it is not error to admit testimony of the actual treatment given, including the pricking of the finger with a needle.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

Am. Assn. of Pathologists and Bacteriologists, Toronto, Apr. 10-11.
American Surgical Association, New York, April 9-11.
California State Medical Society, Santa Barbara, April 14-16.
Georgia Medical Association, Atlanta, April 14-16.
Louisiana State Medical Society, New Orleans, April 20-23.
Mississippi State Medical Association, Columbus, April 14-16.
Missouri Valley Medical Society, Lincoln, Neb., Mar. 26-27.
New York State Medical Society, New York, April 28-30.
South Carolina Medical Association, Florence, April 14-16.
Tennessee State Medical Association, Memphis, April 7-9.

CONFERENCE ON MEDICAL EDUCATION

Held in Chicago, Feb. 24, 1914

The Tenth Annual Conference of the Council on Medical Education of the American Medical Association was held February 24. There were 244 registered delegates and guests.

The session was presided over by DR. ARTHUR DEAN BEVAN of Chicago, who, in his address, discussed three subjects: Medicine, a function of the state; clinical professors in university medical colleges, and the hospital year. The first portion is published elsewhere in this issue of THE JOURNAL. The second and third portions (in abstract) were as follows:

Clinical Professors in University Medical Schools

The men who are in favor of extending this practice to the clinical chairs say that inasmuch as it has been shown that it is best to have men who are not engaged in private practice teach anatomy and pathology, it follows that it would be best to have men who are not in private practice teach medicine and surgery. With this fundamental proposition, this new experiment is to be tried. The men who are responsible for this experiment are non-medical and non-clinical men. Clinical teachers know that in the very nature of things the teaching of anatomy and pathology is in no way parallel to the teaching of medicine and surgery, because the teaching of medicine and surgery are inseparably associated with the practice of medicine and surgery.

The men who should decide this important question are the clinicians in our better medical schools, the members of the special clinical societies, such as the Congress of American Physicians and Surgeons and its component bodies, the American Surgical Association, the American Ophthalmological Society and like bodies, composed as they are of the best men in these special fields of clinical work, and also the men in the various sections of the American Medical Association, the sections on medicine, surgery and the specialties. Would it not be unwise for any group of men outside of these bodies to formulate and attempt to institute an organization of clinical departments without the cooperation and endorsement of these clinicians? It cannot in fairness be said that the medical profession itself has been slow to make improvements and advances in medical instruction, and that it requires the stimulus and assistance of outside agencies to urge it on to further advances and improvements, because, as a matter of fact, in no other field of human effort have greater advances been made in the last thirty years than in medicine, and in no other department of education during this time have greater advances been made than in medical education.

The head of a clinical department in the medical faculty should be three things: first, a great clinician; second, a trained teacher, and third, a qualified research worker. He should be placed on the same basis as any other university professor and on the same salary and position in the faculty, provided, however, that nothing in this position conflicts with his retaining his place in the medical profession and in the community as a recognized authority in his special field of practice, and with his remaining in close touch with the practice of medicine and the medical profession.

The head of a clinical department should have under him the necessary number of associates and assistants, younger men from 25 to 40, on living salaries enabling them to devote the major portion of their time to teaching and research, and if a university clinical department has any considerable amount of money at its disposal it should be largely used to pay for living salaries to these younger men who are devoting the most productive period of their lives to teaching and research in clinical medicine.

The Hospital Year

The profession in each state must through the efforts of state and county medical societies educate the people, and through the press carry on a vigorous campaign of education such as will result in the people demanding the creation of machinery and appropriations which will give them the protection and benefits of modern scientific medicine. [Dr. Bevan's conclusions are as follows:]

1. There are enough hospital places in the country to provide hospital internships for all those now graduating in medicine.

2. Correspondence with a number of our better schools reveals practical unanimity in favor of adopting the compulsory intern year.

3. The feeling is fairly general that this requirement should be enforced by the state licensing boards.

4. The practical solution of the question should be brought about by the medical school or schools in each state petitioning the state licensing board to adopt a ruling, making such hospital year compulsory, or when necessary to secure the needed modification of the medical act.

5. The adoption of this hospital year requirement should be made compulsory by state boards on students entering October, 1914, so as to put it in force on the men who come up for graduation in 1919. This will give ample time for a complete investigation of the hospital situation of the country and for each school to put itself in touch with the hospitals within its sphere of influence and thereby provide opportunities for its graduates. The time will also be sufficient for the state boards to develop the necessary machinery to put the requirement in force.

The Danger to the Maintenance of High Standards from Excessive Formalism

A. LAWRENCE LOWELL, president of Harvard University, presented a paper on this subject which is reproduced in full elsewhere in this issue.

DISCUSSION

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: President Lowell does not object to the requirements, as I understand it, but to the administration of them. He agrees with all of us I think that *no man* is fit to study medicine unless he is pretty thoroughly acquainted with the fundamental facts in the physical, chemical and biologic sciences. Medicine consists of the application of the discoveries of science to the prevention or the cure of disease. The facts of the biologic, physical and chemical sciences are the pabulum on which medicine feeds. Without these sciences, everything that goes under the name of medicine is fraud, sham and superstition. Medicine can advance no further than the sciences on which it is based, and it is perfectly preposterous to think of teaching any one medicine without the possession on the part of that person of the fundamental facts of those sciences; and with all due respect to Harvard University, it has demonstrated this fact, because for many years Harvard University required only short courses in chemistry for admission among the sciences. It demanded a bachelor's degree, but the man who had the bachelor's degree need not have anything more in the sciences than short courses, and I think that the Harvard men are now quite thoroughly convinced that this is not the way to teach medicine.

There are difficulties in the administration of the requirements for the study of medicine, I do not think they are ideal at all, but I believe they are practical, and with some difficulty they can be administered.

As to languages, the professor of pathology of the University of Michigan, College of Medicine and Surgery, requires that students read Ziegler in German. Most of the instructors in the first two years require of every student during each semester a translation from some current article or some article in some current medical or scientific journal, leaving the choice between German and French.

No man, I care not if he has the genius of Daniel Webster or the wisdom of a Solomon, can properly study medicine without a knowledge of the fundamental sciences on which medicine is based.

Administering the Preliminary College Year in Physics, Chemistry, Biology and Modern Language

A paper on this subject was presented by Dr. Richard H. Whitehead, dean of the Department of Medicine of the University of Virginia, Charlottesville, which appears in full elsewhere in this issue.

DISCUSSION

Dr. Paul G. Woolley, Cincinnati: The ideas of good medical colleges may be stated as follows:

1. A good medical school does not intend to assist in adding to the numerical burdens already heavy on the profession; it intends that the men it sends out shall be morally and scientifically fit, even if they be few in number.
2. It does not intend to let down its standards for the sake of students.
3. Students must be taught not only the present needs of medicine, but they must be taught to look ahead, be watchful and keep in touch with the future developments in their profession.
4. The duty of a medical faculty is not, primarily, to train men to make a living from the practice of medicine, but to make them agents of social improvement.

The students who indicate a preference for medicine should during the last two years of the elementary school, be given training in botany and in introductory physiology. These subjects will serve to test their interest, and cannot fail to be of value, no matter what the outcome. Drawing and English, during these years, should be taught in connection with the scientific courses; German and mathematics could also be given a vocational bearing.

Good medical schools now require six years of preliminary preparation beyond the elementary school. I believe that this requirement could be reduced to five, at most, and that four of these years, which should include what is now the first year of college, should be spent in the high school, leaving but one additional year to be occupied by university work. This at least could be done in the case of students who announce a desire to prepare for medicine at the beginning of the high-school course. An alternative would be for the high school to prepare students for the university in three years, and allow them to spend their two premedical academic years in the higher institution. The reason the medical school is obliged now to send the graduates of the high schools to the university for two years before it can accept them is chiefly that their preparation in science is deficient.

Mr. Michael F. Guyer, Madison, Wis.: At the beginning of the introductory course in biology, the student should be given some motive or general point of view to keep him properly oriented. In my own work I have found the practice of giving students at the outset a few simple principles of interpretation—which are equally applicable to all animals, or plants, either, for that matter, from the lowest to the highest—has always been of great service in helping them to see all facts in their proper relations. They soon come to realize that any special technicality, which for the present may be engaging their attention, is after all only a detail of the general simple principles with which they are already familiar.

If the premedical student is to have a second year of biologic training I should say that it might well be given up mainly to embryology and to comparative anatomy of vertebrates. To be sure, he will get some mammalian and human embryology in his medical training, but experience has shown that he gets incomparably more out of this if he has had a preliminary course on the simpler development of such forms as the frog and chick. While a course in comparative anatomy is perhaps a less indispensable prerequisite, nevertheless a student who has followed the same fundamental organ-systems, from their first comparatively simple condition in primitive vertebrates through their increasing complexity in successive higher forms, has a much broader understanding of anatomy and a more intelligent comprehension of the meaning of human structures than the student who has had only dissection of the human cadaver with perhaps a perfunctory preliminary dissection of some such mammal as the cat.

Lastly, I think it may be justly urged that a modest course is well worth while somewhere in the curriculum that will give premedical students a clear-cut biologic insight into the problems of human life, particularly the phases pertaining to human heredity.

In conclusion, in my opinion, not only should the course in biology supply the student with a certain necessary modicum of biologic facts, but if it is to attain its highest efficiency, it must also leave him with an increased problem-raising, problem-solving attitude of mind, and inculcate in him accuracy of observation and independence of judgment.

Charles R. Mann, Associate Professor of Physics, University of Chicago, gave at length the reasons why physics is a stumbling-block in premedical work, and why it does not tend to encourage students in the use of a scientific method of thinking.

Hospitals and Their Relation to Medical Colleges and the Training of Interns

Dr. Christian R. Holmes, dean of the Ohio-Miami Medical College of the University of Cincinnati, then presented an illustrated paper on "Hospitals and Their Relation to Medical Colleges and the Training of Interns," which is presented in full on another page.

DISCUSSION

Dr. John L. Heffron, Syracuse, N. Y.: The ideal condition is for a college to own or control its own hospital, and to have it officered by teachers in medicine, surgery and the various legitimate specialties who are sufficiently remunerated to permit them to devote the greater part of their time to teaching and to research, but not so much of it as to deprive them of the opportunity to come in touch with practitioners of medicine or surgery as consultants, or to deprive a community of the benefits of their labor and experience. Such an ideal would necessitate the control, not only of general hospitals, but of all the hospitals that are of necessity differentiated from general hospitals, as the hospitals for contagious diseases, including tuberculosis, the hospitals for mental diseases, the hospitals for women and children, and those for the treatment of surgical specialties, etc.

The greatest value of hospital training to an intern is the putting on him of responsibility. Hitherto he has had opportunities and duties only. It is the assumption of personal responsibility and the realization of a personal obligation to be accurate, logical, resourceful and honest twenty-four hours in every day that transforms the medical student into a safe practitioner of medicine.

Dr. Walter L. Bierring, Des Moines, Iowa: It is clearly evident that a hospital year must be added to the requirements for practice. Medical colleges, therefore, will do well to anticipate the action of the Council on Medical Education and of licensing boards, because I feel that in a few years all licensing boards will generally adopt this requirement.

Dr. J. M. Baldy, Philadelphia, favored the hospital year and said: The cry in regard to the hospital year, as was shown last year, was the fear that it could not be carried out. In the first place, it was thought that there were not sufficient hospitals; second, that the hospitals could not be adequately controlled; and third, that the working scheme, if it were controlled, would not be an efficient one. In trying out the hospital year in Pennsylvania we have all these difficulties to contend with. We propose to feel our way carefully and have gone at the solution of the matter in that spirit.

Preliminary Draft of the Report of the Committee to Investigate Graduate Medical Instruction

The report was presented by Dr. H. D. Arnold, Boston. The other members of the committee are Drs. Arthur Dean Bevan and N. P. Colwell.

The report says: It is not practical to have a sharp dividing-line between the courses of the undergraduate and of the graduate schools on the basis of the grade of the work. The academic idea of the relation of the graduate school is modified to meet the practical problem of what is reasonably demanded by the graduates.

We believe that it is desirable that the field of graduate medical instruction should be made even more extensive than this, and that it should include courses equivalent to the elementary as well as to the advanced courses of the undergraduate school. Many graduates for various reasons recognize sooner or later the need of reviewing these elementary courses or of studying them more thoroughly than they did during their medical course. Moreover, what is elementary in the best schools is advanced work for graduates of poorer schools. Many graduates who are desirous of increasing their medical knowledge are not equipped to take advantage of advanced courses. For such physicians courses of an elementary character should be provided. As a rule, the curriculum in the undergraduate school is poorly adapted to the needs of these men, and it is more practical to have courses in these subjects specially organized for them by the graduate schools.

If the graduate school is to meet the needs of graduates in medicine, as they now exist in this country; and if it is to render the greatest service to the profession and to the community it should provide courses in medicine varying from elementary to the most advanced. From the point of view of the community, it is the most poorly prepared physicians who should be most encouraged to improve their medical knowledge and experience.

The objects of graduate medical instruction may be enumerated as follows: (1) to offer advanced instruction and opportunities for research; (2) to prepare physicians for special fields of work; (3) to offer opportunities for review, and for keeping in touch with the advances in medical science since the physician graduated, and (4) to make up the deficiencies in previous medical education.

As a matter of benefit to the public, any earnest, reputable practitioner, licensed by the proper authorities to practice medicine on the public, should be allowed to take such courses as he is qualified for by previous training and experience.

On this basis a graduate of the poorest school might legitimately be admitted for instruction in a graduate medical school if he is already a licensed practitioner of medicine. A sharp line should be drawn, however, against graduates of schools which give an inadequate training, if the graduates are not legally registered.

It is generally recognized that the loose regulations about granting certificates for postgraduate work often result in a definite evil. Such a certificate usually has a form similar to a diploma. It is suitable for display and is calculated to impress the public. Ordinary persons are apt to regard such a certificate, displayed in a doctor's office, in much the same light as a degree, and they look on its possessor as a full-fledged specialist in any subject mentioned on the certificate. Advantage is taken of this by unscrupulous physicians who pose as specialists without any real justification in the knowledge or experience they have gained. Such practice is little short of quackery. The American Medical Association should use its influence to correct this evil, for the whole profession suffers in reputation on account of the poor work done by such so-called specialists.

There can be no uniform admission requirements of an educational character. While the scope of a graduate school may reach from the elementary to the most advanced courses, few schools will be able to cover satisfactorily the range of such studies.

Whether or not it will be wise to attempt a classification of graduate schools remains to be seen. It is evident that any system of classification must be more complicated than the present classification of medical schools. One school may have excellent opportunities for instruction in clinical subjects, but may be very poor in the laboratory courses, or the reverse may be true. Schools should be encouraged to do only such work as they can do well, but they should in some way receive proper recognition for good work, no matter how limited the field is. In a medical center, where there are two or more schools, it would seem desirable to arrange some plan for cooperation between the schools in graduate instruction. Each school can do the work for which it is best equipped, or in which it is most interested.

The more the subject of graduate instruction is studied, the more important it appears in relation to the proper care of the public. The object of the Council is to be helpful to those schools which wish to give good instruction of this sort, and to gather reliable information for the benefit of those who are seeking such instruction.

Other Proceedings of the Conference

Dr. G. T. Monod, Vichy, France, was introduced and said he had been commissioned by the Minister of Public Instruction to visit America, make observations, and report on graduate medical instruction. He had thus far visited Boston, Baltimore and New York, and his expectations had been surpassed with regard to the excellence and thoroughness of teaching done in the medical schools of those cities. He predicted that before long the best men in France and other countries would cross the ocean to avail themselves of the marvelous opportunities for research offered in America.

Dr. E. P. Lyon, dean of the University of Minnesota Medical School, Minneapolis, said that he was certain that educators in general would be very loath to extend the term "graduate instruction" to include all the things mentioned in the report of the committee.

Dr. R. W. Powell, registrar, Ottawa, Ont., gave a short historical summary of what has been done in Canada by the system known as the Dominion medical registration. His paper is reproduced entire on another page.

Dr. William L. Rodman, Philadelphia, spoke of the feasibility of establishing a voluntary national board of examiners whose standard would be so high that it might be recognized by all of the state boards.

Dr. Casey A. Wood, Chicago, spoke in favor of reciprocity between states, but urged the necessity of establishing uniform requirements for practice in the various states.

A vote of thanks to Dr. Bevan, chairman of the conference, for the able and impartial manner in which he had presided over the deliberations of the meeting, which was proposed by Dr. Abraham Jacobi, and seconded by several members, brought the conference to a close.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Twenty-Fourth Annual Meeting, held in Chicago, Feb. 25, 1914

The President, Dr. Elias P. Lyon, Minneapolis, in the Chair

Officers Elected

The following officers were elected for the ensuing year: president, Dr. Isadore Dyer, Tulane University; vice-president, Dr. Charles R. Bardeen, University of Wisconsin; secretary-treasurer, Dr. Fred. C. Zapffe, 3431 Lexington Street, Chicago; members executive council, Dr. William J. Means, chairman, Ohio State University; Dr. Randolph Winslow, University of Maryland; Dr. Egbert Le Fevre, University and Bellevue Hospital Medical College; Dr. F. C. Waite, Western Reserve University; Dr. E. P. Lyon, University of Minnesota, the president and the secretary.

Dr. William J. Means was appointed delegate to the Council on Medical Education, and Dr. Fred. C. Zapffe, delegate to the Federation of State Medical Boards.

Report of Committee on Medical Education and Pedagogics

Dr. Isadore Dyer, New Orleans: A questionnaire was sent to every college in membership in this association to state in exact terms facts concerning its organization, methods and opinions concerning the following questions:

1. How does the intending student of medicine formulate his entrance credits with your school?

There is no uniformity in the method of establishing entrance credits. High schools are accepted as standard without referendum to any authoritative source of final standardization. No systematic basis can be formulated until some central authority, like the Carnegie Foundation, the General Education Board or a national examining board will provide a list of acceptable high schools, derived from the whole of the United States. The credits for college work are mostly accepted on the estimate of the college issuing them. No standard form of requirements seem to be in use.

The committee concludes as regulations have been promulgated by this association covering the basis for entrance credits either from the high school or the college that some systematic forms should be devised by which all colleges in membership should have uniform methods of evaluation of credits, so set out that the student transferring from one college to another might do so with credits easily understood as standard.

2. Give detailed statement of courses required in each year for M.D. degree, branch, composition, hours, scope of laboratory work.

3. Would you suggest changes in present arrangement?

The general conclusion must be drawn that each college arranges its work on a plan which suits its own opportunities best, and not with a view to coordinating with other institutions. The number of hours in each year varies considerably, as does the distribution of subjects of instruction. The absence of uniformity argues the need of a special report by this committee, with a view of establishing a basis through which the credits from one college may be acceptable on their face value to another college of the same rating.

4. Is your work arranged in half-year periods, so that students may transfer to any year from another college to your college? What are the conditions for transfer?

It would seem that there is room for entertaining the value to be placed on students migrating from one college to another in midterm. Often potent reasons are advanced for such transfer and enough colleges permit such to argue the recognition of this practice when the curriculum will allow it.

5. What curricular outline do you propose for the projected fifth year, when it is required?

6. Does your institution propose to require a fifth or sixth hospital year? How will you satisfy this requirement?

The conclusions are that very few colleges want a fifth year and that the large majority of the colleges in membership will not inaugurate a fifth year as a part of the regular curriculum, unless forced to do so; that the available hospital provisions under college control or direction will prevent any general adoption of a hospital year as part of the college course, no matter how much it may be desired.

6. (Continued.) Will you express an opinion as to the method and desirability of making the fifth year elective, but that a specified number of subjects should be taken, with a specified number of total hours, divided among required major and minor subjects?

The preponderating objection to an elective fifth year as replacing the intern year apparently disposes of this question; but as state boards of examiners are yet debating the alternative it would be well to entertain the question as one simply laid on the table and not entirely relegated.

If and when the hospital year is required either before the degree is conferred, or after the degree with added credit, there must be provision in acceptable hospitals for all graduates who hope to qualify before state boards. It seems unlikely that this hospital provision will come for some time, and even if there are enough hospitals of proper grade to supply places for interns, the further condition is evident that there must be concert or agreement with medical colleges, by which proper work may be afforded and proper supervision enforced so as to satisfy the necessary credits.

In the meantime a considerable percentage of graduates will be without hospital appointments, and without an alternative to offer state boards or even the colleges requiring the intern year. Some state boards accept this position as one needing provision and the postgraduate year of clinical work done at a hospital, or a year in research or public health service is accepted.

The intern must have exceptional place in a well-organized hospital to get all the clinical work he needs, and it is not an uncommon thing for the clinical student, not an intern, to get a larger variety of work than does the intern.

The question has been submitted in good faith as one of a number imminent in the medical problems of to-day and it has received a fair consideration.

Should a Hospital Internship Be Required as a Prerequisite to Graduation?

Dr. John M. Dodson, Chicago: With the state of Pennsylvania requiring an intern year as a prerequisite to a diploma, and with the hospitals clamoring for interns who cannot be supplied, the question of an intern year is no longer one for discussion. The advantages of such a requirement are evident. In the first place, it would lead to a better correlation of the work between the college and the hospital. In the second place, it would give the college and the hospital a hold on the intern, to the end that it could compel him to fulfil his contract, and, third, the diploma would stand for a complete medical education, corresponding to the degrees conferred abroad in the foreign schools.

Hospitals must devise methods of administration whereby this intern year shall be a real educational year. The best pedagogic results are attained by a departmental service, so that the intern shall do one thing long enough to learn to do it well. When the service is so administered that an intern who has spent a year in one department can secure an extension of six months or a year in another department, it makes a well-rounded and satisfactory service. There should also be a resident physician or surgeon whose business it is to conduct the medical work of the hospital under the direction of the staff, and see that the interns do their duty, and that they are properly instructed. The solution of the hospital problem must come about by some sort of affiliation by specific contract, by which the medical work is absolutely in control of the faculty of the college. In such an arrangement both contracting parties have certain duties. The college is obligated to furnish interns who are adequately trained for the service. I should also make it a provision of the fifth year that every intern shall do some piece of work of a research or investigative character, and embody his results in a thesis. The intern must have decent quarters and decent food. Extramural members of the faculty should serve as instructors to these interns, and meet the faculty from time to time. The faculty ought to have some control over appointments. It should have the right to protest against the appointment of any person it does not deem fit. The hospital should not limit its appointments to the students from one school. The term of service ought to be as nearly uniform as possible, and I should like to see it made a year, with the privilege of a six or twelve months' extension. This five-year arrangement is of more importance to the hospital than to the college. The college needs the hospital, but the hospital needs the college more, because it needs the quickening, elevating influence of a teaching organization.

DISCUSSION

Dr. W. S. Carter, Galveston, Tex.: An intern year is perhaps the most important part of one's medical training, but the conditions that obtain in a large city do not obtain in the smaller cities. For instance, we are now placing probably fifteen interns in different hospitals in Texas, and as many more in hospitals outside of the state, yet we cannot at present secure enough places for all our graduates. Furthermore, we cannot control the hospital work. The work is not uniform or organized, and it seems unreasonable to expect a medical college to give credit for that sort of work, or even to require it for the degree. It seems a much more reasonable arrangement to have this requirement come from the state board of medical examiners than from the medical colleges. Until the hospitals can be improved, until there can be some standardization, until we can secure cooperation between the hospitals and the medical schools, it seems impossible to require this fifth or intern year. The matter of continuous service in one department seems a mistake. Undoubtedly, it is the best thing for the hospital and for the staff, but it is not for the intern. He should not specialize until he has rounded out his training in every service.

Dr. John L. Heffron, Syracuse, N. Y.: I am in accord with the idea that the degree of Doctor of Medicine ought to be withheld until after the student has passed a term of service in the hospital. I am ready to advocate that every student shall require of a man who wishes to practice medicine at least one year of hospital work.

Dr. B. R. Shurly, Detroit: We have established an elective fifth year and we are able to supervise the instruction. The student can be given his examination at the end of his elective fifth year, and the college can have the absolute appointive power in the various hospitals. I would rather see a man take an intern service of one year than to be compelled to take the two years preliminary college work.

The Teaching of Medicine

Dr. Charles Hugh Neilson, St. Louis: If we should devise some method by which the student could carry the facts of anatomy and chemistry to physiology, and the facts of the fundamentals to the clinical years, the problems of teaching would be solved. This can be done by the correlation of related ideas in an elastic curriculum. Too few clinicians know of the work being done in the first two years, and many men in the first two years have no real conception of the work done in the last two years because they are nonmedical men or they are too wrapped up in their own problems. These things are so, first, because little or no attempt is made to develop mutual interest between the two lines of work, and secondly, because lack of sympathetic relationship is the natural outgrowth of the departmental idea. Departments are made up of specialists who are engrossed with their own problems, and are heedless of related problems. Specialism in clinical medicine gives the patient a better chance for life and health, but the specialist as a teacher of medicine has made medical education piecemeal. Specialism is and should be the foundation of medical teaching, but it should be a correlated specialism. A conference of the departments of physiology, anatomy and neurology to discuss the teaching of diseases of the nervous system might make a difficult subject more easy. The same is true of every other subject. Every subject should be taught by a master. Research work should be encouraged, but a fair proportion of the research worker's time should be demanded for actual teaching in the lecture-hall and laboratory. These great men should be an inspiration. The trouble lies in attempting to teach too much in detail instead of along general lines. The pendulum of laboratory and experimental work has swung far beyond its normal arc. Each department in the college attempts to fill the educational cup full. Let us teach more by teaching less. Our laboratories are too often mentality deadeners. In the clinical years, the same waste of time, material and ability is often found. The teaching here should be type teaching. It is a waste to attempt to teach with too much material, quite as much so as with too little. I believe in the laboratory, but I am convinced that we are not getting the best results from it. Let us bind our whole medical structure together with a correlation of related ideas.

Teaching of Surgery

Dr. Arthur Dean Bevan, Chicago: In most of our medical schools we have too many men in the clinical department. Many are taken into the department because of their connection with some hospital, which will furnish the school with a certain amount of instruction. I am able to handle my department with about twenty-five men. In some schools, as is the case abroad, the unit system prevails; that is, one man is the head of one unit at one hospital, another man at another hospital, and so on. This may be a good plan where there are many students, but not where the classes number about a hundred men. In addition to the head of the department there should be about ten men to help carry the burden. It would be desirable if these men were salaried so that they could devote all or the largest part of their time to the work. I should not like to see the head of the department a full-time, salaried man, not expected to do any practice, and turning into the treasury of the institution any fees which may come to him from consultation work. It would be much more desirable to adopt the German plan, giving the head of the department a good salary for the major part of his time, and allowing him to devote some of his time to outside work, provided it is done in his hospital, or in connection with the clinical hospital in which he is teaching, with the same assistants, the same staff and the same clinical laboratory which he uses in his regular teaching work. If there is much money to be paid for salaries, it should go to the ten men who are carrying the burden of the department.

For a class of 100 students a hospital with at least seventy-five beds is necessary. Billroth did all his teaching with eighty beds. That would mean probably a teaching hospital of 300 beds or more for 100 senior students. Overshadowing the hospital, so far as clinical instruction in surgery is concerned, is the free dispensary or outpatient department, because it furnishes the right sort of material for the students. For teaching in internal medicine the hospital material is of more value. I should like to emphasize the importance of the outpatient material in the teaching of surgery. For a school of 100 students, 15,000 surgical cases a year, including genito-urinary and orthopedic cases, would be the number needed to do the work creditably. We should demand of each man that he be a trained clinician, a trained teacher, and qualified to do some research work. Nothing is more important in the surgical department than well-equipped clinical and research laboratories. I think that some of the time allotted to surgery should be given to surgical anatomy, surgical pathology, clinical and conference courses, genito-urinary surgery, orthopedics, and work on the cadaver, as well as to the clinics. The amount of time that can be devoted to hospital training in the senior year is so inadequate that it is to be regarded simply as an introduction to the intern year which is to follow.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, VII, No. 3, pp. 169-252

1 The Nutritive Value of Some Proprietary Infant Foods. R. Wheeler and A. Biester, Urbana, Ill.
2 Pylorus, Pylorospasm and Allied Spasms in Infants. A. F. Hess, New York.
3 *Cardiac Stimulants: Strychnin and Caffein. W. P. Lucas, San Francisco.
4 *The Value of the Complement Fixation Test in the Treatment of Gonococcus Vulvovaginitis. G. G. Smith, Boston.
5 A Probable Relation Between Enlargement of Thymus Body, Lymphatism and Shock. H. C. Clark, Ancon, Canal Zone.
6 Rules for Calculating the Approximate Composition of Milk from the Specific Gravity and Percentage of Fat as Determined by the Babcock Method. H. I. Bowditch, Boston, and A. W. Bosworth, Geneva, N. Y.

3. Cardiac Stimulants: Strychnin and Caffein.—Lucas has watched the effects of strychnin in nine cases during the past few months. All these cases were the result of endocarditis occurring in the course of rheumatic fever infection. Strychnin was given for a period of from two to four days, in varying doses, and its effect watched closely and compared with the patients' average picture as relating to cardiac condition, pulse, respiration, blood-pressure, also their general improvement, appetite, freedom from pain, improvement in restlessness, etc., when simply resting in bed or resting in bed plus digitalis. Lucas found that strychnin is practically of no avail when given in the ordinary doses which are prescribed for children. Even in adult doses of 1/50, 1/40 or 1/30 grain, there were no appreciable effects. It was only when doses amounting to 1/10 grain or more were given (either at one dose or in quick succession of smaller doses) that any appreciable effect was noted; and then the effect appeared within thirty minutes and disappeared within two hours.

In four cases in which he studied caffein sodium benzoate as a stimulant, in the ordinary dose of ¼ or ½ grain hypodermically or by mouth, Lucas could observe no effect; only in doses of two or more grains hypodermically was there any appreciable effect, and then the effect was very small and of short duration. From these observations he concludes that strychnin and caffein in the doses usually used for cardiac stimulation are of no value. It is only when the larger, maximum doses are used that we get any effect, and the effect is usually then of short duration. Whether this is a beneficial effect is even questionable in children with cardiac involvement. It may be that strychnin stimulation makes the heart work harder, and that it should not be used as a cardiac stimulant. Its effect on respiration in the conventional dosage is of no value; in larger doses, it does appear to slow the respiration up to the point where there are toxic symptoms (slight twitchings) or increased hypersensitiveness of the reflex arc, or when the heart action becomes more rapid and the blood-pressure falls.

4. **Complement-Fixation Test in Treatment of Gonococcus Vulvovaginitis.**—It is Smith's belief that in the determination of a cure a weakly positive test cannot be considered evidence that infection is still present. A negative test, on the other hand, appears to be proof of its absence. Of seven patients who had weakly positive blood tests a year ago, five are now clinically well. Of these, two have negative bloods, one a moderately positive and two weakly positive. The other two show some vaginitis in which, however, gonococci could not be found. Smith claims that long and persistent treatment, frequent and severe tests of its probable cure, are necessary to complete success. In the great majority of cases of vulvovaginitis efficient treatment will insure the destruction of the gonococcus; a small proportion ot such cases, however, will be liable to attacks of non-gonococcal inflammation for some time.

Boston Medical and Surgical Journal

February 19, CLXX, No. 8, pp. 261-296

7 The Significance of Intra-Abdominal "Bands," "Folds" and Veils. W. S. Bainbridge, New York.
8 *Prognosis of Sarcoma of Testicle. E. A. Codman and R. F. Sheldon, Boston.
9 Have Early Claims of Salvarsan Been Realized? C. M. Smith, Boston.

February 26, CLXX, No. 9, pp. 297-332

10 Study of Some Types of Disturbance of Stomach and Intestines Associated with Adhesions Involving the Intestinal Tract, and Their Treatment. H. F. Hewes, Boston.
11 Serodiagnosis of Pregnancy. A. K. Paine, Boston.
12 Seven Cases of Serious Eye Complications Following Use of Salvarsan. P. S. McAdams, Boston.
13 Early Diagnosis and Treatment of Dementia Praecox. E. Mellus, West Newton, Mass.
14 Diabetes and Surgical Operations. C. G. Cumston, Boston.

8. **The Prognosis of Sarcoma of the Testicle.**—Of 64 known cases analyzed by Codman and Sheldon 56 patients were operated on. Thirteen are living (average time after operation 9 years; extremes 2 and 28 years), and 10 have died from something else (average time after operation, 10 years; extremes 7 months and 26 years). That is, 23 or 41.07 per cent. of those operated on survived the disease. If 8 unoperated cases and 12 cases operated on when metastases were evident are excluded, 52.27 per cent. were cured. The authors conclude, therefore, that the prognosis of sarcoma of the testicle, while bad, is not, when operated, so universally bad as text-books would lead one to infer.

Among the 64 cases there was but 1 with the origin of the disease in the epididymis, but among the 16 cases, the results of which were not traced, there were 2 of this nature. In these 3 cases the preliminary diagnosis was tuberculous epididymitis; in 2 the pathologic report was sarcoma; in the third there is no record of pathologic examination, but macroscopically the specimen was sarcoma. In 4 of the 64 known cases the testicle had not descended at birth, thereby confirming the belief that the undescended testicle is more prone to sarcomatous degeneration than the normally placed organ.

Of 33 operated patients who died from the disease, 21 had no sign of metastasis at operations, yet death occurred in all within three years. Only 12 showed metastasis at operation; in spite of the fact that in 2 of these additional dissection was done, all were fatal. Nearly every case gave a history of trauma; but Codman and Sheldon are not inclined to regard this as important in the etiology.

Georgia Medical Association Journal, Augusta

February, III, No. 10, pp. 323-358

15 Care of the Newborn. M. A. Clark, Macon.
16 Plea for More Interest in Pediatrics. C. A. Rhodes, Atlanta.
17 Intubation in Diphtheria. W. N. Adkins, Atlanta.
18 Clinical Significance of Stools of Infancy and Childhood. H. W. Hesse, Savannah.
19 Treatment of Convulsions; Report of Six Cases. J. R. McMichael, Quitman.
20 Acute Mastoiditis, Report of Four Patients Treated with Vaccines. A. B. Mason, Waycross.
21 Some Things Doctors Need to Think About and Act On. Q. Holton, Douglas.
22 Oil-Ether Anesthesia. J. C. Pate, Valdosta.

Indiana State Medical Association Journal, Fort Wayne

February, VII, No. 2, pp. 47-92

23 Cancer Prophylaxis. M. H. Hadley, Indianapolis.
24 *Manner of Growth and Surgical Treatment of Cancer of Breast. W. D. Gatch, Indianapolis.
25 Selection of Cases for Internal Bone Splints. K. Speed, Chicago.
26 Medical and Surgical Crimes. E. DeW. Wales, Indianapolis.

24. Abstracted in THE JOURNAL, Oct. 11, 1913, p. 1400.

Journal-Lancet, Minneapolis

February 15, XXXIV, No. 4, pp. 93-119

27 *Pathology of Thyroids from Cases of Toxic-Non-Exophthalmic Goiter. L. B. Wilson, Rochester, Minn.
28 Mastoidectomy, with Report of Cases. A. D. McCannel, Minot, N. D.
29 *Medical Treatment of Gall-Bladder Infections, with Report of Cases. D. L. Rundlett, Sioux Falls, S. D.

27. **Pathology of Thyroids.**—Wilson studied 431 thyroids removed from cases of true exophthalmic goiter, 373 thyroids removed from as many cases of non-toxic (i. e., simple) goiter and 129 thyroids removed from toxic-non-exophthalmic cases with symptoms closely approaching the picture of Grave's disease. One hundred and fifty-five thyroids removed from toxic-non-exophthalmic cases in which the clinical picture closely resembles, and, in many instances, cannot be differentiated from, the cardiovascular complex resulting from alcoholic, luetic, septic and other well-known toxins, and thyroids from 90 cases similar to the last, but of more mild or doubtful toxicity.

The results of this study are summarized as follows: The pathology of the thyroid in true exophthalmic goiter is essentially a primary parenchymatous hypertrophy and hyperplasia, i. e., an increased amount of functionating parenchyma associated with an increased absorption. The process is an acute one. The pathology of atoxic simple goiter is marked essentially by atrophic parenchyma, decreased function and decreased absorption. The process is a chronic one. The pathology of toxic-non-exophthalmic goiter (i. e., those resembling exophthalmic goiter) is one of increased parenchyma through regenerative processes in atrophic parenchyma or the formation of new parenchyma of the fetal type with an increase in each instance of secretory activity and of absorption. The process is a chronic one, but sufficiently active to cause the patient to consult a surgeon earlier than do those cases in clinical Group 1. The nearer the cases (toxic-non-exophthalmics) approach, in age and symptoms, true exophthalmic goiter, the shorter the duration of the period of goiter before operation, and the smaller the average weight of the gland at the time of its removal.

The cases of toxic goiter of clinical Group 1 (i. e., those in which the symptoms are of the cardiovascular variety) much more closely resemble cases of simple goiter in their pathology in all respects than do the cases of clinical Group 2. A larger number of them are of the colloid-goiter type, the enlargement of the thyroid has existed for a longer period before operation, and the portion of the gland removed is materially larger than in those cases of clinical Group 2. Finally, it is stated that all the above pathologic evidence points to a constant relative association of increased secretion and increased absorption from the thyroid, proportional to the degree of toxicity on the part of the patient. We have as yet no absolute proof that such secretion and absorption are the cause of, rather than coordinate with, the symptoms, but the presented evidence strongly points to that conclusion.

29. **Treatment of Gall-Bladder Infections.**—The treatment of these conditions, from a medical point of view, Rundlett says, is very unsatisfactory, and in his experience a cure is impossible. To be sure, symptoms are often relieved temporarily, but there is always a recurrence on the slightest indiscretion in diet, or slight chilling of the body. He has obtained the best results from the use of succinate and salicylate of soda, 5 grains of each in plenty of hot water, four or five times a day, with Carlsbad salt in hot water in the morning to clean out the intestinal canal and help to relieve the acidity of the somach that is generally present.

He has had no success with hexamethylentetramin in these cases. When given in large enough doses to do any good along the bile tract, it caused too much irritation of the stomach and kidneys to be safe to use. He has not had very much faith in olive oil. In a case of this kind there is a marked intolerance for fats of all kinds, due probably to the mild grade of pancreatitis, which is almost always present. For the intestinal putrefaction with distention of abdomen, Rundlett has often used a combination of ox-bile, pancreatin, bicarbonate of soda, betanaphthol and salol. This, given about two hours after meals, certainly helps to keep the fermentation down, but is only palliative. A mild diet, in which fats are largely excluded, has in his hands worked the best. He allows patients to have milk, buttermilk, fresh vegetables and fruits. All foods liable to putrefaction, such as overripe cheese, shell-fish and the like, are to be avoided; also highly seasoned foods, gravies and pastries. Water, preferably one of the mildly alkaline waters, is to be given in abundance. The use of bacterial vaccines before drainage, has proven disappointing, but after drainage they certainly help markedly in cleaning up the infection. Rundlett's experience has been that the rational treatment of these cases has been a prompt gall-bladder drainage, and his paper was prepared more with the intention of emphasizing this feature than to give any new ideas on medical treatment of gall-bladder disease.

Kansas Medical Society Journal, Kansas City, Kan.

February, XIV, No. 2, pp. 49-88

30 Malignant Papillary Cystadenomas of Ovary. C. C. Nesselrode, Kansas City.
31 Surgery of Gall-Bladder. J. C. Butler, Stafford.
32 Prevention of Typhoid. J. C. Cornell, Parsons.

Medical Record, New York

February 21, LXXXV, No. 8, pp. 323-362

33 *Intravenous Injections of Sodium Salicylate in Treatment of Rheumatic Affections. L. A. Conner, New York.
34 Study of Prostitution in Europe. D. C. McMurtrie, New York.
35 The Inflammatory Affections of Nasal Accessory Sinuses in Children. S. Oppenheimer, New York.
36 *Carditis. G. M. Swift, New York.
37 *Technic in Roentgentherapy, with Especial Reference to Deep Therapy as Practiced at Freiburg by Kronig and Gauss. A. F. Holding, New York.
38 Consideration of Objections to Psychanalysis. S. A. Tannenbaum, New York.
39 Value of Absorption Methods in Wassermann Test. M. P. Olmstead, New York.

February 28, LXXXV, No. 9, pp. 369-414

40 Extradition of Insane Persons. H. R. Stedman, Boston.
41 Mental Torticollis as a Psychoneurosis. L. P. Clark, New York.
42 Evolution of the Study of Anatomy and Its Important Relation to the Development of Surgical Knowledge. J. E. Mears, Philadelphia.
43 *Care of Surgical Patients. D. C. Balfour, Rochester, Minn.
44 Traumatic Neuroses, Due to Alleged or Actual Injury, from the Medicolegal Standpoint. R. Wallace, Chattanooga, Tenn.
45 Eclampsia, with Total Absence of Albumin but Generalized, Hard Edema. (Pure Chloride-Retention?) C. K. Austin, Paris, France.
46 Causation of Dreams. H. Rahmet, Cairo, Egypt.
47 Lichen Planus of the Glans Penis; Its Treatment with Roentgen Rays. F. Wise, New York.
48 Standard Educational Qualification for the Anesthetist. R. C. Coburn, New York.

33. **Intravenous Injections of Sodium in Rheumatic Affections.**—Conner's experience with the intravenous administration of the drug is limited to twelve cases of articular rheumatism of various degrees of severity in which about 130 injections were used. Chemically pure, crystalline sodium salicylate was used alone in a 20 per cent. solution. He at first used a needle of the size commonly employed for blood cultures and occasionally this was followed by thrombosis at the site of puncture. When, however, he began using a very small hypodermic needle and was careful to see that it had a fine, sharp point, this difficulty ceased immediately and it was found that the same vein could be used over and over again without the slightest pain and without local irritation or thrombosis.

In most cases the dose has been either 15 or 20 grains and the injections have been given at twelve- or eight-hour intervals over a period of from three to six days. Occasionally, in robust men, as much as 30 grains have been given at a time and as much as 120 grains given in the first twenty-four hours without any unpleasant effect whatever. Indeed, one of the noticeable features of this method of administration, in Conner's experience, has been the entire absence of shock, prostration or other objectionable constitutional effect. The relief of pain is prompter and more pronounced than is usual when the drug is administered by mouth.

In spite of examples of marked benefit Conner is by no means convinced that the intravenous method is, in general, more effective than the usual one, and is far from feeling that it should replace the method of mouth administration for routine cases. That it has a field of usefulness, however, he is convinced. It solves most satisfactorily the problem of the treatment of those patients who are quite unable to retain the drug when given by mouth.

36. **Carditis.**—The points emphasized by Swift are: (1) that acute cardiac affections are due to germ infections; a sepsis (according to Rosenow the most common infecting germ is *Streptococcus viridans*); (2) that the infecting germs are distributed throughout all the structures of the heart and by the blood vessels of the coronary system, and (3) that the most important factor in treatment is the discovery of the source of infection and its removal.

37. Abstracted in The Journal, Jan. 24, 1914, p. 329.

43 **Care of Surgical Patients.**—Balfour emphasizes the importance of explaining to patients recovering from a surgical operation just how to take care of themselves and what they should expect in the way of symptoms after being dismissed from the hospital. He says that it is a mistake to allow patients to believe that their recovery will be complete in a month or two after an operation on the gall-bladder, stomach or even the appendix. The postoperative treatment of these patients in the way of judicious living should continue for several months according to the type of operation. To patients who have been operated on for exophthalmic goiter should be carefully explained the possibility of a recurrence of the trouble, and all the circumstances of every case should be explained to some member of the family at the time of operation. If there is a possibility of hernia following drainage the patient should be apprised of the fact. These patients should also be told as explicitly how long to refrain from their usual work. The basis of treatment of surgical patients is simplicity. The after-care should cause little worry except in the event of complications, since the work should be completed in the operating room.

Missouri State Medical Association Journal

February, X, No. 8, pp. 267-304

49 The Semicircular Canals and Function of Equilibrium. G. E. Shambaugh, Chicago.
50 Etiology of Nasal Hydrorrhea, with Case Reports. H. Kahn, Chicago.
51 Luke, Greek Physician. G. Homan, St. Louis.
52 Ocular Lesions Connected with Vascular Disease. J. W. Charles, St. Louis.
53 Typhoid. J. A. Fuson, Mansfield, Mo.
54 Poliomyelitis Acuta. A. L. Skoog and E. T. Gibson, Kansas City, Mo.
55 *Bilateral Renal Calculi. O. H. Brown and E. A. Babler, St. Louis.
56 Remote Effects of Chronic Appendicitis. J. C. Lyter, Moberly.
57 Scientific Work in Medicine. T. O. Klingner, Springfield.
58 Typhoid Vaccine. J. D. Seba, Bland.

55. **Bilateral Renal Calculi.**—The not infrequent and distressing end-results of medical treatment of nephrolithiasis, unilateral as well as bilateral, the authors claim, warrant the conclusions that, first, every case of suspected renal calculus is entitled to a skiagraph of both kidneys, and, if necessary, ureteral catheterization, in addition to the usual method of diagnosis; and, second, that the early removal of the stone offers the patient the best possible chance.

New Mexico Medical Journal, Las Cruces

February, XI, No. 5, pp. 143-176

59 Typhoid Treatment, Prevention and Immunization. S. A. Milliken, Pinos Altos.
60 Suppurative Nephritis. E. B. Shaw, Las Vegas.
61 Operative Treatment of Uterine Retrodisplacements. C. M. Yater, Roswell.
62 Thrombosis and Embolism Following Abdominal Operations and Childbirth. L. G. Rice, Albuquerque.

New York Medical Journal

February 21, XCIX, No. 8, pp. 357-408

63 Glaucoma. W. Reber, Philadelphia.
64 Glioma of Cauda Equina. W. M. Leszynsky, New York.
65 Transvestism. B. S. Talmey, New York.
66 Primary Pernicious Anemia. W. G. Baetz, Canal Zone.
67 Care of Crippled Children in Germany. D. C. McMurtrie, New York.
68 Eyes of Neurotic. C. W. Le Fever, Philadelphia.
69 Morality of Venereal Prophylaxis. R. A. Bachmann, United States Navy.
70 Natural Defenses of the Body Against Disease. C. C. Sutter, Rochester, N. Y.

February 28, XCIX, No. 9, pp. 409-460

71 Motor Anomalies of the Eye. A. Duane, New York.
72 *Futility of Phenolsulphonephthalein as an Indicator of Renal Function. M. W. Ware, New York.
73 Properties of Parathyroid Extracts. H. R. Harrower, London, England.
74 *Ross Jelly Film Method in the Diagnosis of Syphilis. J. A. Roddy, Philadelphia.
75 *New Method of Determining the Dust in Air and in Fresh Air Schoolrooms. J. B. Todd, Syracuse.
76 Diagnosis of the More Common Diseases of the Rectum and Anus. E. J. Leavitt, New York.
77 Surgery in Goiter. I. A. Stoloff, New York.
78 Roentgen Diagnosis. J. Friedmann, New York.
79 Carbon Disulphid as a Therapeutic Agent. H. H. Seelye, Daytona, Fla.

72. **Futility of Phenolsulphonephthalein as an Indicator of Renal Function.**—The efficiency claimed for the drug because of its complete rapid elimination and its reappearance in an unaltered form, Ware claims cannot bespeak any elaboration in the sense of work done on the part of the kidney, for this is denied by the very definition of efficiency, which represents the ratio of useful work to energy expended. The dye output can be estimated colorimetrically. The interpretation of the colorimetric reaction is the issue. Evidence adduced favors its being an acidometric test, but without any claims of parallelism existing between the degree of acidity and kidney function. Its non-irritating nature, non-toxicity, smallness of dose titled as virtues (Geraghty and Rowntree) are but of the negative variety. As for the information being accurate and precise, this is controverted by the theoretical, chemical, experimental and clinical evidence herein set forth and which forbids reliance on the extravagant claims of phenolsulphonephthalein as a funtional kidney test.

74. **Ross Jelly Film Method in the Diagnosis of Syphilis.**—The examination of blood for Ross bodies is not believed by Roddy to be as simple a procedure as has been reported; he insists that more than ten minutes should be devoted to the examination of a slide before it is declared negative; it is often difficult to differentiate these bodies from artefacts, sometimes impossible. The value of the test as an aid to diagnosis is greatly reduced by the occurrence of the bodies in the blood of non-syphilitic patients, or what amounts to the same thing, the occurrence of artefacts difficult if not impossible to distinguish from them.

If the bodies described by Ross as *Lymphocytozoa pallida* really are such, then Roddy claims they do not occur in non-syphilitic patients and our positive finding in non-syphilitic cases raises the question of the nature of the bodies found. It seems equally probable that the bodies described by Ross may not be living parasites, but products of human tissue acted on by toxin; that the toxin of syphilis causes this change very frequently, more frequently perhaps than most others, but that some other toxins also produce these bodies. The Ross bodies are present in the blood of most syphilitics and less frequently present in those suffering from other diseases. Their true nature has not been conclusively established, nor has it been shown that these bodies do not occur in normal persons.

Roddy is convinced that the Ross test is much inferior to the Wassermann test in the diagnosis of secondary and tertiary syphilis, and believes that the examination of material from suspected initial lesions for Ross bodies, in addition to examination for spirochetes, will be a valuable aid in differentiation of chancres and chancroids.

75. **New Method of Determining the Dust in Air and in Fresh Air Schoolrooms.**—After many experiments the following method has proved satisfactory to Todd in giving a positive objective answer to the question of how much dust there is in the air: A canton flannel disc, $2\frac{3}{16}$ inches in diameter, is placed in a receiver which has a round opening 1 inch in diameter. Through this, by means of a suction pump, 200 cubic feet of air are drawn. On removing the canton flannel disc we have the dust record. For the purpose of standardization a scale of ten gradations, from white to black, has been made. The pump used was a rotary quadruple bellows pump from a player piano. The United States Weather Bureau standardized the apparatus and found that 200 cubic feet of air are drawn through the apparatus in twenty-three minutes.

Todd is satisfied, since using this objective method of dust determination, that we have greatly underestimated the effect of breathing dust as a cause of ill health and disease.

Ohio State Medical Journal, Columbus

February, X, No. 2, pp. 69-81

80 Combined Dental and Nasal Treatment to Restore Normal Nasal Respiration. J. A. Thompson, Cincinnati.
81 Obstetrician and Prevention of Infant Mortality. A. Furrer, Cleveland.
82 Industrial Electricity as a Cause of Cataract. E. Lauder, Cleveland.
83 Cooperation of State Medical Societies in Public Health Education. E. S. Everhard, Dayton.
84 The Arneth Leukocytic Picture, Its Value in Prognosis of Tuberculosis. W. E. R. Schottstaedt, Toledo.

Pennsylvania Medical Journal, Athens

February, XVII, No. 5, pp. 311-422

85 *The Use of Massive Doses of Antitoxin. S. S. Woody, Philadelphia.
86 *Statistical Study of Hydrothorax; Its Diagnosis and Treatment. J. M. Anders, Philadelphia.
87 *Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax. C. M. Montgomery and J. Speese, Philadelphia.
88 *Fresh-Air Treatment in Pneumonia. M. H. Fussell, Philadelphia.
89 Hot Pack and Continuous Hot Bath in the Treatment of Alcoholic Patients with Lobar Pneumonia. T. G. Simonton, Pittsburgh.
90 *Oral Sepsis. R. C. Rosenberger, Philadelphia.
91 Dental Aspect of Oral Asepsis. I. N. Broomell, Philadelphia.
92 Early Recognition of Mastoid Disease and Early Operative Procedures to Prevent Loss of Hearing. H. F. Pyfer, Norristown.
93 An Unusual Streptococcic Infection Complicating Double Pneumonia. M. D. Ritchie, Pittsburgh.
94 Philadelphia County Medical Society. C. A. E. Codman, Philadelphia.
95 Vesical Calculi Caused by Suture Material. C. M. Stimson, Philadelphia.

85. **The Use of Massive Doses of Antitoxin.**—The results Woody has noted, compared with results in cases which have

received smaller doses, are as follows: Much prompter disappearance of the local signs of the disease, i. e., the membrane. With the use of large doses we do, not have a period of anxious waiting to determine whether or not a result has been achieved. Yet in severe or obstinate cases, he does not hesitate to repeat as often as necessary, the primary dose; even if it has been a very large one. At times he has found it to be an advantage to gauge roughly the amount of antitoxin that would appear necessary, and to give it in a number of doses within a stated time, say twenty-four hours. Such spaced doses do not give the reactions caused by doses repeated at longer intervals. The use of large doses more quickly overcome the toxemia of the disease, so that coincident with the change in the disease locally, there is a marked improvement in the patient's general condition which is noticeable in a very few hours. Late complications are lessened in frequency and severity. The use of massive doses, to a large extent, does away with those cases in which an apparent cure is followed by a return of dangerous and fatal symptoms. The rapid cures that result from the use of large doses are real and not apparent. It has been stated by some that large doses of antitoxin can neutralize in some measure toxic products already in combination with the tissues, but this is still open to question.

86. **Statistical Study of Hydrothorax; Its Diagnosis and Treatment.**—The incidence of hydrothorax in Anders' opinion is greater than has been supposed, particularly in chronic myocarditis associated with arterial sclerosis of either moderate or severe grade, and chronic interstitial nephritis. It is unilateral in 30 per cent. of the cases, according to his statistical investigations. Hydrothorax not uncommonly occurs without external edema. The condition is quite frequently overlooked, as shown by an examination of the postmortem records of the Philadelphia Hospital, especially when secondary to myocardiovascular changes. It is vitally important to a diagnosis of the condition to make a thorough physical examination of the thorax in every case in which the occurrence of hydrothorax is even a remote possibility, or in which such symptoms as dry cough and dyspnea are present. The best method of treatment Anders holds embraces the rational use of rest and cardiants, as well as aspiration, which should precede, as a rule.

87. **Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax.**—Montgomery's own experience would, he says, keep him from recommending the use of artificial pneumothorax in the treatment of pulmonary tuberculosis in any but exceptional cases, which must be selected with the utmost care. Certain cases of hemorrhage offer the strongest indication for the treatment.

88. **Fresh-Air Treatment in Pneumonia.**—By fresh-air treatment Fussell means the patient should breathe air which is not superheated, and which has not been breathed before. Usually he spends the entire illness in a room with all the windows up, night and day, in all kinds of weather; or, much better, on a protected porch with one whole side open. This is to be carried out at all seasons of the year. If the patient is in a room it is much better that there should be at least two windows. This is an easy task in warm weather, but Fussell admits that it takes courage and firm conviction that we are right to keep a patient, seriously ill, during stormy weather, in a room which is cold and to the nurse uncomfortable, but it pays the patient. The patient in cold weather must be carefully protected so that he will not feel uncomfortably cold. Without exception those patients who are conscious and able to express their thoughts say they are more comfortable. Even in cold, bitter weather they are not cold. They do not "catch cold." On the contrary bronchitis and coryza, if they exist, become less than when the patient is treated inside, and the temperature is of lower range. One sees nothing of the septic sweats, and other discomforts. Cyanosis and air hunger are less. In carrying out this treatment Fussell insists that the nurse must be taken care of. She should be wrapped up well with heavy boots, heavy underclothing, and a sweater in very cold weather. A skilled nurse is indispensable. Drugs, venesection, etc., are not specific; but they frequently must be used, and certainly save life frequently, but above all Fussell warns against being meddlesome.

90. Abstracted in THE JOURNAL, Oct. 25, 1913, p. 1563.

Southern Medical Journal, Nashville, Tenn.

February, VII, No. 2, pp. 87-170

96 *Cerebrospinal Meningitis with Special Reference to Certain Signs or Measures. R. Lyons, New Orleans.
97 Bacteriology of Cerebrospinal Meningitis. K. R. Collins, Atlanta, Ga.
98 *Cerebrospinal Meningitis with Report of Patient Treated by Introducing Serum into Lateral Ventricle. R. V. Martin, Savannah, Ga.
99 *Tuberculosis: Intestinal Planting in Childhood; Lung Harvesting Later. E. C. Thrash, Atlanta, Ga.
100 *Distinction Between an Infection by Tubercle Bacilli and Tuberculosis. M. E. Lapham, Highlands, N. C.
101 *Protection for Post-Sanatorium Tuberculous Patient. L. B. Morse, Hendersonville, N. C.
102 Diagnosis and Treatment of Tuberculosis. D. S. Wilson, Louisville, Ky.
103 Value of Rest—Physical and Mental—in Tuberculosis. W. J. Durel, New Orleans.
104 Some Phases of Tuberculosis Problem. W. R. Kirk, Hendersonville, N. C.
105 Secondary Infections in Tuberculosis. J. B. Rogers, Independence, Ia.
106 Medicinal Treatment of Bronchitis and Pneumonia. I. L. Van Zandt, Fort Worth, Texas.
107 Preventive Medicine and Hygiene. J. Y. Porter, Jacksonville, Fla.
108 Hemostasis During and Following Tonsillectomy. H. Dupuy, New Orleans, La.
109 *Use of Iodin in the Abdomen. J. A. Crisler and E. J. Johnson, Memphis, Tenn.
110 Preparation and Administration of Autogenous Vaccines. H. Henson, Jacksonville, Fla.

96. **Cerebrospinal Meningitis with Special Reference to Certain Signs or Measures.**—An analysis of twenty-one cases forms the basis of Lyons' paper. The patients were males, and all but two were colored. The average age was 23 years. There was but one child in the series (5 years). From the point of view of early diagnosis the eight measures analyzed by Lyons fall into the following order of importance: Lumbar puncture stands first among the special measures. The initial puncture established the diagnosis in 95 per cent. of the cases. Next in importance is rigidity of the neck. This could be demonstrated in 20 out of the 21 cases on first examination, or 95 per cent. Kernig's sign comes third. It was present on first examination in 90 per cent. of the cases and at some time during the disease in 100 per cent. The "neck sign" falls into fourth place.

Lyons found that Brudzinski's statement with regard to the relatively greater value of his "neck sign" over Kernig's sign in children does not hold good for adults. It was found positive on admission in 76 per cent. of cases and could be elicited at some time during the affection in 94.4 per cent. Brudzinski's contralateral (identical) reflex comes fifth on the list, being present on first examination in only 33.3 per cent. of the cases. It was positive at some time during the disease in 50 per cent. of the cases. Babinski's sign occurred in but three cases, or 11.6 per cent., at some time during the disease. In two of the cases it was positive on admission. Macewen's sign was found to be practically of no value in this series. It could be demonstrated in but one instance. This patient was the only child (5 years) in the group. The field of usefulness of this sign, as well as Babinski's, seems to be limited to meningitic affections of early childhood. Lastly, the presence or absence of the patellar reflexes was found to be of no apparent diagnostic or prognostic importance.

98. **Cerebrospinal Meningitis Treated by Introducing Serum into Lateral Ventricle.**—In the case Martin reports the treatment was by puncture of the left lateral ventricle, drainage and introduction of Flexner's serum into same. The patient was a boy 19 years old. Temperature on admission was 101 F., pulse 100, stiffness in muscles of neck, intense headache, and Kernig's sign was present. A lumbar puncture revealed purulent fluid which was found to contain *Diplococcus intracellularis meningitidis*. After drawing off some of the fluid, the usual amount of serum was injected into the canal and during the succeeding twenty-two days ten injections

were given. After each injection there was a temporary improvement in his general condition, the severity of the headache was only slightly improved. His temperature ran from normal to 103 F., mental condition gradually becoming more and more impaired; eyesight failing.

On the twelfth day of the treatment he lapsed into a mild coma, and was steadily losing weight; a general rigidity became very marked. The spinal fluid varied considerably in consistency, and at times it was fairly clear. The pulse remained fast. It was while in this apathetic condition that Martin determined to trephine and treat the patient as stated above. Accordingly, the skull was opened at a point in front of the bregma, 2 cm. from the midline, inserting the hollow needle downward and slightly backward about 5 cm., when the fluid under pressure was allowed to escape until it ceased flowing through the needle; then the usual dose of serum was introduced into the ventricle. A drain was inserted down to the dura, and wound closed in the usual way. The effect of this operation was very marked; his condition began to clear up immediately; temperature ran from subnormal to normal, and within two weeks after the operation the patient was discharged from the hospital cured.

99, 100, 101. Abstracted in The Journal, Dec. 20, 1913, pp. 2269 and 2270.

100. **The Use of Iodin in Abdomen.**—The authors use 2½ per cent. solution of iodin in alcohol, undiluted, and as soon as the incision is made and the cavity reached, if pus is discovered free in the peritoneal cavity, this solution is poured in immediately so as thoroughly to flood the infected area before any attempt is made to liberate the pathology. By this means they have learned not to fear a spread of infection through mechanical means. The amount of solution used is dependent on the extent of peritoneal infection; that is to say, if the contamination is partially or completely localized, *two or more ounces may be sufficient to flood the field and* render the necessary service.

If, however, there is a widespread infection or a diffuse, septic peritonitis, they retract the abdominal incision and elevate the parietes and literally pour the entire abdomen and pelvis full of this solution, taking great care to make sure that the drug reaches all of the fossae and recesses within the abdominal and pelvic cavities. This may require anywhere from 8 to 32 ounces or more of the solution. After the pathology is dealt with they take large towel sponges and gently insert these into the most dependent fossae and mop out the excess solution and debris, avoiding scrubbing and trauma. In every case they employ the usual drainage, Fowler position and Murphy treatment. If there is profound toxemia they also use saline hypodermoclysis and, when indicated, intravenous saline transfusion, in order more rapidly to eliminate the toxins. Their results are satisfactory to them.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Clinical Journal, London

January 14, XLIII, No. 2, pp. 17-32

1 Spina Bifida. R. A. A. Stoney.
2 Acute Intestinal Obstruction in Children. L. A. Parry.
3 Common Pitfalls in Physical Examination of Chest. C. Riviere.

January 21, No. 3, pp. 33-48

4 Syphilitic Affections of Bones in Childhood. D. C. L. Fitzwilliams.
5 *Common Forms of Alopecia and Their Treatment. S. E. Dore.

January 28, No. 4, pp. 49-64

6 Hemorrhage in Tonsil and Adenoid Operations. J. F. O'Malley.
7 Causes and Symptoms of Mucous Colitis and Its Treatment by Irrigation as Done at Harrogate and Plombiéres. A. Mantle.

February 4, No. 5, pp. 65-80

8 Two Cases of Retroperitoneal Rupture of the Duodenum. R. L. Knaggs.
9 Common Errors in Diagnosis in Diseases of Eye. E. Clarke.
10 Migraine and Eye-Strain. S. Stephenson.

5. **Common Forms of Alopecia.**—In seborrheic cases Dore believes that resorcin or salicylic acid, mercuric chlorid, sulphur and tar are the best drugs. In the majority of cases he uses a lotion such as the following:

	gm. or c.c.	
Hydrarg. chloridi corrosivi....	03—.12	gr. ss—ij
Resorcini vel acidi salicylici....	30—.60	gr. v—x
Olei lavand.	06—.12	♏ i—ij
Olei ricini vel glycerini	30—.60	♏ v—x
Spt. vini rect. ad 30		℥ j

If the scalp is dry the castor oil may be increased in quantity; if excessively greasy a solvent of fat such as ether or acetone may be added.

A spirit lotion is, he states, the best dressing for the hair of women; in men, water or weak spirit with glycerin instead of castor oil is sometimes preferable. Resorcin discolors white *or very fair hair and salicylic acid should then be* substituted. In severe cases an ointment may be required at first and may be rubbed in every night and washed off in the morning, or a small quantity applied *once* or twice a week after shampooing, that is:

	gm. or c.c.	
Naphthol β......................	30— .60	gr. v—x
Sulph. præcip	60— 1.20	gr. x—xx
Resorcini	60— 1.20	gr. x—xx
Ol. lavand.	06— .12	♏ i—ij
Vaselini ....ad 30		℥ j

To this oil of cade, etc., may be added.

When seborrhea is not a marked feature, as in toxic and nervous cases, pilocarpin may be substituted for the mercuric chlorid in the first prescription or prescribed with ammonia or other stimulant, that is:

	gm. or c.c.	
Pilocarpini nitrat.	30	gr. v
Liq ammon. fort. 4		ʒ j
Tinct. lavand. comp.......... .		ʒ j
Spt. vini. rect. 45		℥ jss
Aquam. ....ad 180		℥ vj

This lotion is also effective in slight degrees of seborrhea, because the ammonia forms a soap with the fat of the scalp. Other useful stimulants are chloral hydrate, acetic acid and cantharides; the last should be used with caution on account of its action on the kidneys. *Internal medication should not* be forgotten, especially in neurotic and anemic cases and the glycerophosphates, cod-liver oil, iron, strychnin and arsenic are of service.

Lancet, London

January 31, I, No. 4718, pp. 289-366

11 *Tuberculosis as Infective Disease. W. C. Bosanquet.
12 Present Position of Acute Appendicitis and Its Complications. H. Lett
13 Trauma in Relation to Certain Aspects of Nervous Disease. C. M. H. Howell.
14 *Percutaneous Tuberculin Reaction. A. J. B. Leckie.
15 Case of Postoperative Osteomyelitis of Frontal Bone. W. G. Porter.
16 Case of Acute Tetanus with Recovery. V. E. Negus.
17 Vaccines from Standpoint of Physician. T. J. Horder.

February 14, I, No. 4720, pp. 485-512

18 Experimental Principles of Operative Treatment of Fractures and Their Clinical Application. E. W. H. Groves.
19 Common Errors in Diagnosis and Treatment of Diseases of Joints. A. P. Luff.
20 Case of Mitral Stenosis, Cardiac Thrombosis, Aortic Embolism and Gangrene of Both Legs. H. E. Symes-Thompson.
21 *New Method of Treating Chronic Coli-Cystitis and Other Bacterial Infections. C. Russ.
22 Errors of Refraction in Schoolchildren. A. S. Percival.
23 Case of "Spastic" Constipation. R. Gompertz.
24 Extra-Articular Ankylosis of Inferior Maxilla Due to Foreign Bodies in Scalp for Ten Years. W. MacDonald.
25 Case of Intussusception Treated by Enterectomy. E. G. Gauntlett.
26 *Multiple Mesenteric Lipomas Causing Obstruction.* S. Mort.

11. **Tuberculosis as Infective Disease.**—Bosanquet summarizes his paper as follows:

1. Infection with tuberculosis is wide-spread and takes place largely in infancy and early childhood. 2. It is partly due to bacilli derived from human sources, partly of bovine origin, but the former type greatly predominates. 3. Direct communication from one human patient to a healthy individual does not occur in adult life under good sanitary conditions, with the possible exception of a few instances in which there has been very close and prolonged contact. Under bad hygienic conditions direct infection may occur, children being specially susceptible. 4. The exact mode of transmission of the bacillus is unknown, but inhalation affords the simplest explanation, although the localization of the chronic form of the disease in the lungs is not in itself evidence of direct implantation there. 5. The chronic form of the disease met with in adults is due to their increased resistance, as compared with children who suffer from the acute variety of tuberculosis, and this increased resistance may be the result of early inoculation with sublethal doses of bacilli. 6. The outbreak of tuberculosis in later life may be due either to reinfection from without or to recrudescence of a latent focus of old infection. 7. A general rise in resistance has

been brought about owing to the wide dissemination of the disease among European nations, and the fall in the death-rate is largely due to this factor and to improved hygienic conditions.

From these conclusions Bosanquet deduces the practical moral that the most hopeful measures which can be taken with a view to combat the disease are such as are directed toward improving the general well-being, and especially the housing conditions of the poorer classes.

14. **Percutaneous Tuberculin Reaction.**—The ointment which Leckie employed consisted of tuberculin and anhydrous wool fat, according to Moro's formula. Usually the front of the chest was the site chosen, occasionally the abdomen if more convenient. A portion of ointment about the size of a pea was firmly rubbed in by the finger over about 4 square inches, the process taking thirty to sixty seconds; sometimes the skin was previously cleansed with ether. No dressing was applied.

Of his series of 400 cases, 96 presented unquestionable signs of tuberculous disease, comprising various lesions. Of these patients 33 reacted, leaving 63 tuberculous cases devoid of response. Out of 304 cases clinically free from the disease, 38 gave results; 9 of them were doubtful, 4 of which reacted. Twelve per cent. of reactions occurred in non-tuberculous individuals and over 34 per cent. in subjects of the disease. In pulmonary tuberculosis the results were bad; 34 out of 43 cases entirely failed to respond. In osseous tuberculous lesions only half the cases reacted. The majority of cases of tuberculous peritonitis failed. Out of 21 cases in which signs of morbidity were wanting the reaction appeared in 4; but the rheumatic cases did not give the large percentage of reactions which Leckie has observed with the von Pirquet test.

All the cases of enteric fever and pleural effusion gave negative results; 2 of the effusion cases had definite tuberculous signs. The best reactions were found in well-nourished individuals, especially children. In order to form a more close comparison between the von Pirquet reaction and the Moro test Leckie applied both in a series of 132 cases. Of these cases 51 were definitely tuberculous, but only 13 out of these reacted to both, and 20 failed to respond to either, but Leckie has never observed a tuberculous case which reacted to the ointment, fail also to react to the von Pirquet method. Out of cases clinically free from tuberculosis 6 responded to both tests, 50 failed to react to either. Whereas 23 reacted to the scarification only 2 non-tuberculous cases gave results with the ointment only.

From the above it is clear that the von Pirquet test gives a larger number of reactions among tuberculous subjects than the ointment test, but at the same time it gives a much larger number of false results among non-tuberculous individuals. These two skin reactions are much inferior to the ophthalmic test, which gives a large percentage of true results, while reactions in non-tuberculous subjects are not very frequent.

21. **Method of Treating Chronic Ulcers and Colicystitis.**—Since nearly all pathogenic bacteria move to the positive pole during electrolysis in sodium chlorid solution, Russ conceived the idea that they might be drawn out of ulcers and infected mucous membranes, etc., if a column of sodium chlorid were superimposed on the diseased area and a current passed in the appropriate direction. If the positive pole were submerged in such a column of saline and the organisms drawn to it by the current, then, as the tissues became free from the bacteria, recovery would ensue. Incidentally also the bacteria would be killed during the process. In 1911 Russ commenced this study by applying the above-mentioned ideas to chronic varicose ulcers of the legs. The majority were healed. The largest was about 5 by 3 inches, and the smallest about 1 inch square.

The method used was as follows: A varicose ulcer was encircled by a special glass vessel larger than its area and fixed in a watertight manner to the surrounding healthy skin. The vessel was nearly filled with saline solution, and furnished with a submerged anode of platinum foil. An electric current was passed from the calf resting on a wet cathode pad (bolster) through the limb, traversing the ulcer to reach the overhanging anode. In this way the bacteria in the ulcer were expected to migrate to the anode, and if they left the ulcer or were killed it would be free to heal. Many experiments as to the amount and duration of current passed were made until favorable results were usually obtained.

Next Russ tried the method in colicystitis. After voidance of any urine the patient reclined on a couch, and a broad abdominal belt of layers of lint was passed round the lower part of the trunk. This belt, which carried a core of metallic gauze, was wrung out with warm salt solution before application. Next a rubber catheter, furnished with several perforations round its eye, was passed into the bladder. The free end of this catheter was connected to 8 inches of glass tubing, which in turn was joined by a short length of rubber tubing to a glass funnel—everything being sterilized. A few ounces of the salt solution (2 per cent.) were next passed into the bladder, and the glass tubing, after disconnection from the funnel, was clamped a little above the level of the pelvis. A platinum wire 6 to 8 inches long was next passed down the catheter to within 2 inches of its eye. This wire was connected to the positive and the core of the belt to the negative poles of the electric battery. The fluid in the bladder rose and fell in the glass tubing with the respiratory movements and its movements served as an indicator that the catheter eye was within the vesical cavity. A constant current was now gradually turned on to a magnitude of 3 to 5 milliamperes, and was allowed to run for 20 or 30 minutes. Russ also tried another reagent, iodic acid in a strength of 1 to 1,500, the wire now being the cathode, and with very good results.

Practitioner, London

February, XCII, No. 2, pp. 157-360

27 Oral Sepsis in Relationship to Septic Anemia. W. Hunter.
28 State Registration of Venereal Diseases. L. Guthrie and Others.
29 Symptoms, Diagnosis and Treatment of Hemic Infections of Kidney. C. A. R. Nitch.
30 Injuries of Back. A. S. Morley.
31 Diabetes and Its Treatment by Means of Physical Agents. J. Rivier.
32 Treatment of Harelip and Cleft Palate. H. Blakeway.
33 Recent Work on Diseases of Nervous System. H. C. Thomson.
34 Recent Work on Radio-Therapeutics and Electro-Therapeutics. N. S. Finzi.
35 Some Continental Methods of Treating Syphilis. J. L. Bunch.
36 Intra-Venous Injections in Blackwater Fever. H. E. B. Bruce-Porter.
37 Hay-Fever. A. G. H. Lovell.
38 Pulmonary Tuberculosis and its Vicious Circles. J. B. Hurry.
39 Mental Suggestion by Transference. A. Douglas.

Annales de Médecine et Chirurgie Infantiles, Paris

February 1, XVIII, No. 3, pp. 69-104

40 Manual Training in the Medical Course. (L'éducation manuelle du médecin.) A. Broca.
41 Choreiform Manifestations in Epidemic Poliomyelitis. (Paralyse infantile choréique.) A. Netter and L. R. Dumas.
42 Instantaneous Radiography in Diagnosis of Pulmonary Tuberculosis in Infants. L. R. Dumas, Mangot and A. Weill.
43 Helminthiasis. (Traitement des oxyures.) M. Perrin and G. Théry.

Archives Générales de Médecine, Paris

January, XCIII, No. 1, pp. 1-96

44 *Symptoms Suggesting Exophthalmic Goiter in the Tuberculous. (Le petit basedowisme chez les tuberculeux.) C. Sabourin.
45 Treatment of Laryngeal Tuberculosis. (Sur un nouveau procédé de traitement de la dysphagie dans la tuberculose laryngée.) A. Saupiquet.
46 Injection of Antiseptic Gas into Pleural Cavity. L. Billon.

44. **Symptoms Suggesting Exophthalmic Goiter in the Course of Tuberculosis.**—Sabourin called attention in 1910 to the frequency of symptoms suggesting instability of the nervous and cardiovascular systems in the course of pulmonary tuberculosis. He here discusses the special form of this which he calls *petit Basedowisme.* The main features are the prominence and luster of the eyeballs, increased size of the neck, and general nervousness, especially a constant restlessness. Attacks of diarrhea may come and go, independently of the diet and rebellious to treatment, sometimes accompanied by signs of congestion of the liver. In other cases a tendency to hemorrhages dominates the clinical picture, epi-

staxis, bleeding in the throat, hemorrhoids, or hemoptysis and disturbances in menstruation. This angioneurotic tendency has a marked aggravating influence on the course of pulmonary tuberculosis, and the lung process may become attenuated or heal entirely as the irritable and unstable nervous system is soothed and steadied. The nervous instability is brought on or aggravated in the predisposed by defective elimination of waste, by overwork, mental or physical, by worry or any cause that depresses the vitality. With rest and proper hygiene, avoidance of meat for a time, the local and general symptoms subside together and a complete cure may follow.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

January, III, No. 1, pp. 1-160

47 *Connection between the Genital Development and Pathology of the Hair. R. Sabouraud.
48 *Resection of Vein in Treatment of Ovarian-Tubal Varicocele. L. Sencert.
49 Cysts in Uterine Cervix. C. Dambrin.
50 The Blood-Vessels of the Pregnant Uterus. (La Zone d'Inclusion de l'Utérus Gravide.) P. Bar.
51 Midwives in England. M. Lemeland.

47. Connection Between the Sexual Development and the Hair.—Sabouraud has been studying for twenty years the pathology of the scalp, and states that there can be no doubt that the falling of the hair and the growth of the hair are linked with physiologic genital development. Physicians have too long disregarded this branch of physiology in animals, especially the "love plumage" of birds. The yard-long tail-feathers of the peacock, for example, sprout and fall in the six months which include the rutting period. He has found that after a hair has been detached it does not drop out until seventy-five or ninety days later. This delay explains why some women who are liable to habitual losses of hair find at the third month of pregnancy that their hair is unusually thick, and that the dropping out does not begin anew till three months after delivery. He says that children, women and, apparently, eunuchs never become bald like men. The tendency to baldness, he adds, makes itself manifest between 17 and 22, and it is always well defined before 30. The ancient Greeks represented satyrs as bald, but with thick youthful hair elsewhere, showing that the baldness was premature. There are certain affections of the scalp which develop exclusively in children, such as tinea tonsurans; this always subsides at about puberty. The adult scalp seems to be invulnerable to this form of tinea. The women and men whose hair is inclined to drop out are generally those with a tendency to profuse growth of hair elsewhere. Aristotle asked, centuries ago, why men alone become bald.

48. Varicocele in the Female.—Sencert has encountered a number of cases of varicocele in the broad ligament, as he describes in detail. The disturbances which it causes have nothing characteristic, merely irregular neuralgic pains in the abdomen and pelvis, aggravated by standing and walking, relieved by reclining and growing more severe as the menstrual period approaches and subsiding as the menstrual flow begins. Menstruation is also liable to be irregular. Women with pelvic varicocele have generally borne several children and then had one or more abortions. If the possibility of varicocele is borne in mind, it can generally be palpated; in one case the weight caused it to sag into the pouch of Douglas. He advises resection of the vein affected. The article is illustrated.

Bulletin de l'Académie de Médecine, Paris

January 27, LXXVIII, No. 4, pp. 93-156

52 *Petrolatum Administered Internally, especially to Combat Constipation. A. Manquat.
53 Condensed Milk in Infant Feeding. P. Lassablière.

February 3, No. 5, pp. 157-200

54 Operative Treatment of Lamellar Cataract. (Cataracte zonulaire.) F. de Lapersonne.

52. Mineral Oils for Internal Use.—Manquat discusses the use of liquid petrolatum in treatment of all conditions in which the physical properties of olive oil have been found of advantage. When chemically pure, the mineral oil seems to be non-toxic in therapeutic doses. Taken fasting, it does not seem to be absorbed and consequently its physical and mechanical action is exerted throughout the entire intestinal tract, contrary to vegetable and animal oils which are digested and absorbed along the way. The mineral oil modifies the bowel content, facilitating its progress and expulsion. It not only lubricates but has a soothing action on spasmodic contraction, and retards intestinal absorption. It seems plausible that the petrolatum may have a healing action on lesions in the intestine the same as on external lesions. He outlines its field as constipation in all its forms but above all when it is accompanied by irritation or spasm of the intestine; in cases of hemorrhoids, prostatic enlargement, muco-membranous enteritis, liver disease, backward displacement of the uterus, chronic appendicitis, after abdominal operations, and in hyperchlorhydria and its consequences. (The question of absorption of mineral oils taken internally was discussed editorially in THE JOURNAL, Feb. 28, 1914, p. 698.)

Journal de Chirurgie, Paris

January, XII, No. 1, pp. 1-144

55 Ligation of Veins in the Pelvis. (Contribution à l'étude de la ligature des veines iliaques internes.) R. Proust and A. Maurer.
56 Spinal Anesthesia. (Rachianesthésies lombaires à la novocaine.) S Mercadé.
57 Battle-Field Surgery. (Quelques faits de chirurgie de guerre). G Pascalis and G. Clarac.

Journal de Médecine de Bordeaux

February 1, LXXXV, No. 5, pp. 75-90

58 Internal Ear Disease plus Cerebellum Disease. (Syndrome labyrinthique et syndrome cerebelleux.) Creyx.
59 Subconjunctival Hemorrhage Following Sudden Arrest of the Menses. C. Lafon.

February 8, No. 6, pp. 93-106

60 Passage of Tubercle Bacilli into the Milk of Tuberculous Women. B. Auché.
61 Fracture of the Head of the Femur. J. Duvergey.

Presse Médicale, Paris

January 28, XXII, No. 8, pp. 77-84

62 Technic for Tonsillectomy in Adults. (L'amygdalectomie.) H. Luc.
63 Efficacy of Iodin Treatment of Exanthematous Typhus. Ouftugeaninoff.
64 Cultivation of the Virus of Rabies. G. Volpino.

January 31, No. 9, pp. 85-96

65 Intubation of the Esophagus. M. Guisez.
66 Cultivation of Tissues outside of the Organism. C. Champy.
67 *The Syndromes from Excessive Permeability of the Kidneys. A. Martinet.

February 4, No. 10, pp. 97-104

68 *Induced Fever in Treatment of Progressive Paralysis. (Le traitement moderne de la paralysie générale progressive selon la methode de von Wagner.) A. Pilcz.
69 Treatment of Scoliosis. P. Desfosses.

67. Excessive Permeability of the Kidneys.—Martinet reports several cases of different types of abnormal permeability of the kidneys. In one the kidneys seem to be abnormally and excessively permeable to water, albumin and salts but not to uric acid. The albumin eliminated ran up to 8 or 10 gm. and the patient, a man of 61, previously healthy except for a recent attack of influenza, speedily wasted away, dying in about six months. In contrast to the acute course in this case, the second patient, a woman of 53, after an obscure acute infectious disease in 1911 gradually developed signs of hyperpermeability of the kidneys and debility slowly progressive to date. Neither of the patients at any time showed any tendency to edema or signs of uremia. In a group of six other cases the hyperpermeability of the kidneys suggests possible diabetes insipidus in some. In all, the overthrowing of the barriers of the kidneys seems to have been the primary trouble; the subnormal blood-pressure and debility are secondary. The findings in the above eight cases are tabulated in detail for comparison.

68. Mercury-Tuberculin Treatment of Progressive Paralysis.—Pilcz here describes the method of treating paresis introduced by Wagner von Jauregg which aims to induce fever artificially, hoping thus to modify the paresis just as an intercurrent febrile infectious disease has been known to modify favorably certain other affections. The experiences to date with the method were reviewed in these columns Feb. 21, 1914, p. 656, all apparently indicating that the remissions in the disease occurred with greater frequency than otherwise and that the remissions were more complete and lasted longer.

The aim being to induce fever, the dose of tuberculin is pushed rapidly from a fraction of a milligram up to 0.01 gm. and is then gradually increased to a final dose of 1 gm. of Koch's old tuberculin. The temperature is taken every three hours, and if there is no febrile reaction the last dose is doubled. If the temperature goes up one degree Fahrenheit the dose is increased by one-half; if more than two degrees, the last dose is repeated. Among Pilcz' eighty-six patients thus treated, 26.68 per cent. recovered so completely that they were released from legal guardianship and another 10 per cent. resumed their ordinary life; 23 per cent. showed no improvement but their condition has remained stationary during the years since, while 39.44 per cent. did not seem to be influenced by the treatment in any way. Mercury is given on alternate days with the tuberculin. Pilcz states further that in looking over the records of 4,134 military officers who had contracted syphilis between 1880 and 1889 he found that 4.7 per cent. have developed general paralysis since, but none of the officers who passed through malaria, erysipelas or other febrile disease during the first few years after their syphilis has developed paresis. No history of a febrile affection of any kind could be discovered in the anamnesis of those with paresis. In conclusion Pilcz reiterates that the fate of the patient is in the hands of the general practitioner who sees him when the paresis is just beginning to make itself manifest. Prompt measures then may ward off much trouble in many instances.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

January, XX, No. 1, pp. 1-28

70 Management of Delivery of Monsters. (Rôle de l'accoucheur en présence de quelques monstruosités foetales portant sur l'extrémité céphalique.) L. Simon.
71 Treatment of Ovarian Tumors in Pregnant Women. P. Puech and J. Vanverts.

Semaine Médicale, Paris

February 4, XXXIV, No. 5, pp. 49-60

72 *Tabetic Dyspepsia. M. Loeper and R. Oppenheim.
73 Solitary Retroperitoneal Enlarged Tuberculous Lymph-Node. (Le bubon strumeux iliaque d'emblée.) F. Lejars.

72. Tabetic Dyspepsia.—Loeper and Oppenheim describe several typical cases of stomach disturbances in tabetics which stopped short of actual gastric crises or which may be regarded as attenuated and prolonged equivalents. The disturbances may pass through the phases of deranged digestion, then mild to violent pains exaggerated by eating, with possibly a terminal period of torpor and atony; this succession, this alternance of disturbances, imprints a special stamp on them as the tabes itself. The progressive atrophy of the fibers of the sympathetic nerve upsets the balance in the innervation of the stomach and leaves the vagus in predominant control. The unchecked action of the vagus on the musculature of the stomach may generate actual chorea of the stomach and spasm of the inlet and outlet. These phenomena cause pain as long as the sympathetic nerve is functioning; they disappear when the vagus itself yields to atrophy and paralysis The gastric crisis seems to be the result of an attack of subacute meningoradiculitis; the dyspepsia results from a chronic and progressive form of the same. The former is the manifestation of the brutal excitation of all the sensory elements of the solar plexus. The dyspeptic condition is the result of the progressive exhaustion of this same plexus and the uncontrolled predominance of the vagus in the innervation of the stomach. The above views suggest treatment by belladonna and atropin to control the vagus, supplemented by all the measures found useful in soothing nervous irritation. Clinical experience is confirming the efficacy of this when there is still a chance for any improvement in the condition.

Berliner ylinische Wochenschrift

February 2, LI, No. 5, pp. 193-240

74 *Radiotherapy of Cancer. (Weitere [illegible]
nombestrahlung.) E. Bumm. [illegible]
Carcinombestrahlung.) Warnekr [illegible]
gen über die [illegible] bei Carci-
nom.) A. Pin [illegible] X-Injek-
tionen auf die [illegible] Gumpertz.
75 Dangers of General Anesthesia with Isopral by the Rectum. P. Kleinschmidt.
76 *Yeast plus Boric Acid for Local Treatment of Acne. H. Buchholtz.

74. Roentgen Treatment of Cancer.—It is about eighteen months since Bumm began systematically to treat uterine cancers with the Roentgen rays, and he states that his experience has convinced him that the future of the treatment of cancer lies in this form of radiotherapy. He has been able with a brief course of it to destroy cancers to a depth of 3 cm. and he adds that improvements in technic may permit action to a depth of two more centimeters. When this is accomplished we have realized all that can be hoped from operative removal of the growth. In ten cases in his experience the tumor was absolutely or relatively inoperable, but under the Roentgen exposures the cancer was completely cured. Even if no further improvement is realized, he reiterates, the progress already realized is a long stride forward. He applied the Roentgen treatment in five operable cases with complete cure in all; nothing pathologic can be detected now at the point of the malignant proliferation, and neither during the course of treatment or later has there seemed to be any injury otherwise. One carcinoma of the urethra reaching up into the bladder seems to be completely cured. One patient with vaginal carcinoma has died of recurrence, and no appreciable influence from the treatment was apparent in a case of carcinoma of the bladder. In six cases of recurrence after operative removal of a carcinoma of the cervix there is no trace of the recurrence now in one case and in the others the tumor has shriveled to a small hard lump. Complete recovery can also be reported in two cases of primary and two of recurring mammary carcinoma; in a third case of recurrence the treatment was unable to prevent the spread of the disease. Bumm's experience with radium and mesothorium has not been favorable; they induced local and general injury in nearly every case in which they were applied to act on deep cancer; he restricts their use now to local application to the primary focus. They have to be applied close to the tissues and are liable to burn while the Roentgen tubes, acting from a distance, are comparatively free from this danger.

Warnekros describes the technic which Bumm has been using, and gives an illustration of the method found most effectual, cross-fire from two Roentgen tubes applied to the abdomen and one in the vagina.

76. Acne.—Buchholtz states that he has been quite successful in a number of cases of obstinate acne with rubbing into the skin a powder consisting of equal parts yeast and boric acid, after the skin has been softened by thoroughly rubbing in a thin layer of boric acid salve. Once a day is sufficient. He sometimes made the powder with two parts yeast to only one part boric acid.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 31, XLIV, No. 5, pp. 129-160

77 Present Status of Treatment of Gastric Ulcer. (Das runde Magengeschwür.) A. Huber.
78 Bacteriologic Examination of Tuberculous Urine. J. Ledergerber and J. Baur.

Deutsche medizinische Wochenschrift, Berlin

January 29, XL, No. 5, pp. 209-264

79 *Treatment of Dyspnea. J. A. Grober.
80 Chemotherapy of Experimental Trypanosomiasis. W. Kolle, O. Hartoch and W. Schürmann.
81 *Harmless Diabetes in the Young. (Ueber den Diabetes innocens der Jugendlichen, zugleich ein Beitrag zur Frage des renalen Diabetes.) H. Salomon.
82 *Diagnosis of Insufficiency of Pulmonary Valve. E. Rehfisch.
83 Large Tumor in the Pleura. H. Dorendorf.
84 Ascarides in the Bile Passages. R. Pflugradt.
85 The Tuberculin Skin Reaction in Children. N. F. Küchenhoff.
86 Inhalation of Oxygen in Disease of the Respiratory Organs. (Ueber medikamentöse Sauerstoff-Inhalation bei Erkrankungen der Atmungsorgane.) A. Brackmann.
87 *Industrial Diseases. (Fortschritte in der Lehre von den Gewerbekrankheiten.) Holtzmannn and Koelsch. Commenced in No. 4.
88 *Modified Technic for Insufflation Anesthesia. E. Jeger.

70. **Treatment of Dyspnea.**—In this tenth article on sudden threatening conditions to which the physician may be called with or without any previous knowledge of the patient, Grober discusses acute dyspnea. He first warns that no matter how pressing the danger, symptomatic treatment of the suffocation must invariably be preceded by a brief study of the patient and history of the case. The treatment of dyspnea must first of all be the removal of the cause and a great variety of causes may be responsible for it. It is important to examine the throat at once either directly or with the laryngoscope. All children should be systematically trained to permit this. It is well also to examine the throat with the finger. He protects the finger by wrapping a handkerchief around the root, but warns for special care with diphtheria as he acquired in this way a local diphtheria from his finger being bitten by the child. The finger may discover a hidden retropharyngeal abscess, edema of the glottis or spasm of the vocal cords, while the retching and coughing which follow digital exploration may expel some unsuspected foreign body or diphtheric membrane.

If the dyspnea comes from a pleuritic effusion or pneumothorax, this is easily remedied by puncture. If the cardiovascular system is responsible for it, intravenous injection of digitalis will ensure better circulation through the lungs and remedy the lack of oxygen; oxygen may be given directly in case of anemia, or transfusion of blood may answer the indications. In case of venous congestion, venesection may be the one thing needed. The dyspnea may be the result of accumulation of secretions in the bronchial tubes which the patient is unable to cough out, and here ipecac or antimony and potassium tartrate in not too small doses every ten minutes may be needed. He adds that it is not generally known what an excellent expectorating effect can be obtained from cooling baths followed by a cool douche. This acts especially on the expectoration from the finer ramifications. The physician must not be deceived in these cases by the cyanosis during the expectoration; it is only the consequence of the powerful movements of expiration during the coughing and it is briefly transient. Even when convinced that the patient is a hysteric, one must not forget that there may still be some organic cause for the dyspnea. Standing and raising the arms helps to expand the lungs; wet cupping or ice bags, rubbing with alcohol or painting with tincture of iodin, may help to relieve dyspnea from an inflamed pleura; sometimes it helps to strap down the affected side of the chest with long strips of adhesive plaster. Patients frightened by their sudden suffocation are liable to be restless and use up their supply of oxygen faster than need be, breathing fast instead of the slow deep respiration required—the physician's tranquilizing influence is of great importance, and he may find hot or cold applications to the chest, rubbing, etc., useful for their suggestive influence. Not every attack of dyspnea requires narcotics, but in very severe dyspnea the patient's distress can be materially relieved thereby.

81. **Harmless Diabetes in the Young.**—Salomon states that he has encountered a number of cases of mild diabetes in persons between 10 and 20 which remained mild and stationary and the proportion of sugar in the blood persisted within normal range. Another feature of the cases was their familial character, and that the patients generally had signs of a neuropathic taint. The glycosuria keeps below 1 per cent. except when the proportion runs up after some casual excitement, and it seems to be independent of the ordinary diet Even after intake of 100 gm. of grape sugar, no more than 10 per cent. is eliminated, and generally not more than 1, 3 or 7 per cent. We can be sure that a mixed diet can do no harm in this *diabetes innocens* or renal diabetes, but he warns expressly against permitting the ordinary diet as it is human to err, and we are never sure at first that the diabetes is of this harmless character, while, on the other hand, a person with this type of diabetes may acquire true diabetes like any one else. Consequently it is best to restrict the diet to a certain extent as for true diabetes until the course through years has demonstrated its non-progressive nature. He describes in detail thirteen such cases, three in one family. The importance of recognizing the harmless character of the glycosuria is emphasized anew by the experience in several of them as their physicians had warned against matrimony, etc. None of the patients had heeded this warning, however, but their lives had been saddened for years unnecessarily by the grave prognosis which had been dealt out to them.

82. **Diagnosis of Pulmonary Insufficiency.**—Rehfisch says that when the diastolic murmur is not accompanied by hypertrophy of the left ventricle, capillary pulse and high amplitude, aortic insufficiency can be excluded; in health, the amplitude, or size of the pulse-wave, averages 40 mm. mercury while in 66 per cent. of all his cases of aortic insufficiency it ranged above 80 mm., and in all other forms of heart disease, including myocarditis and cardiac neuroses, it averaged only 5 per cent. The lack of high amplitude thus tends to exclude aortic mischief. When the diastolic murmur is not accompanied by any other signs of valvular disease or history of endocarditis or syphilis, and the outline of the heart is normal and the somatic disturbances slight, and if the diastolic murmur is audible only as the patient reclines or as he stands, then we can confidently assume that the diastolic murmur in this case is merely accidental and without pathologic significance. If we hear a systolic murmur; the patient reclining, and if this murmur is audible exclusively at the apex and in a narrow zone beyond, and is not transmitted to the base, and if, further, the second pulmonary sound is strikingly prominent, we can be confident that the murmur will not be audible when the patient stands erect and the second pulmonary sound will also have lost its accentuation and the second aortic sound will predominate above it. The accidental diastolic murmur is of a lighter tone and briefer than an organic murmur, but its chief characteristic is also its change as the patient lies or stands, and its temporary disappearance. He encounters this accidental diastolic murmur not oftener than about twice a year, and among 3,000 patients with organic heart disease he has found but 9 with actual organic pulmonary insufficiency. In Barié's report on the necropsies in 58 cases of pulmonary insufficiency, 22 of the patients were over 30, including 10 between 50 and 75. In a number of the patients the valvular defect had existed for many years without much disturbance.

87. **Industrial Diseases.**—This instalment closes the review of the present status of knowledge in regard to occupational affections and intoxications and means of prevention. It is the work of the Obergewerbearzt and Landesgewerbearzt of Bavaria, that is, the official medical advisers in this branch of medicine.

88. **Modified Technic for Insufflation Anesthesia.**—Jeger gives an illustrated description of a device which he thinks does away with the drawbacks of the Meltzer-Auer technic. It is a combination of the Meltzer method, Tiegel's technic for general anesthesia under positive atmospheric pressure, and Kuhn's method of intubation of the upper air passages. A two-way tube is used, one branch of which contains a fine ureter catheter whose tip projects through the wall of the tube into an inflatable rubber bag. When the bag is inflated, the lumen of the trachea is completely closed outside of the two-way tube. One of the branching outer ends of the tube is connected with the oxygen tank, the other enters a jar partly filled with water, which automatically controls the pressure in the tube to conform with the pressure from the oxygen tank which is under control at all times.

Medizinische Klinik, Berlin

February 1, X, No. 5, pp. 183-228

89 *Causes and Treatment of Uterine Hemorrhage. L. Adler.
90 *Influence on Rat Tumors of Serum Containing Ferments Protecting against Some of the Tumor [illegible] (V[illegible] Mitteilung über die Beeinflussung von [illegible] [illegible] [illegible]lt die auf [illegible] Abderhalden.
91 [illegible] [illegible]nn.
92 [illegible] (Behand- [illegible] [illegible]l ulcerösen [illegible] Salzen.) K. Glaessner.

93 Significance of the Symptoms from Tuberculous Bronchial Lymph-Nodes. W. Golz.
94 Study of Certain Plants Poisonous for Some People. (Giftwirkungen von Rhus toxicodendron—Giftsumach—und der Primula obconica, nebst Bemerkungen über Rhus vernicifera—Lackbaum.) E. Rost. Commenced in No. 3.
95 Care of the Feet. (Zur Versorgung wunder Füsse.) K. Dreist.
96 Inheritance of Acquired Characteristics. (Die sogen. Vererbung erworbener Eigenschaften.) F. Lenz. Concluded in No. 6.

February 8, No. 6, pp. 229-268

97 Cesarean Section. (Kaiserschnitt.) E. Opitz.
98 Estimation of Functional Capacity of Kidneys. (Funktionelle Diagnostik der Nierenkrankheiten.) T. Janowski.
99 End-Results of Operative Treatment of Habitual Dislocation of Patella. (Verrenkung der Kniescheibe.) O. Vulpius.
100 Thread-Test of Conditions in the Stomach. (Ueber die Einhornsche Fadenprobe.) M. Wilenko.
101 Artificial Nose. (Nasenersatz bei Lupus vulgaris.) O. Salomon.
102 Curative Influence of Alkaline Applications to Furuncles on Diabetics. A. Brunner.
103 Influence on School Work of Physical Abnormalities. (Beeinflussung der Schulleistungen unserer Volksschulkinder durch körperlicher Störungen.) Peters.

89. **Uterine Hemorrhage.**—Adler writes from Schauta's clinic at Vienna to reiterate that palliative measures should never be applied in treatment of uterine hemorrhage until after malignant disease has been positively excluded. Treatment should of course be causal and the type of the hemorrhage is of great diagnostic importance. With extra-uterine pregnancy, the course is generally either that after a normal menstruation of the ordinary four-day type the following menstruation is retarded several days and then extends over a week or more, or it may occur a few days before the regular period and keep up for two weeks or more, or it may commence at the regular period but keep up for a long time. The hemorrhage is less profuse than at an ordinary menses but it keeps up for days and weeks without interruption, and there is slight discomfort or pain in the side of the abdomen. Conservative treatment is entirely out of the question when extra-uterine pregnancy is once certain, he declares. His research has confirmed the assumption that endometritis has nothing to do with uterine hemorrhage; the uterus proper is seldom responsible for the hemorrhage; the ovaries or reduced coagulating power of the blood, the effects of constipation, tight lacing, a sedentary mode of life, abnormal sexual excitement or emotional stress are more likely to be the factor or factors involved, inducing irregular menstruation or prolonging and exaggerating normal menses. Local treatment of the uterus has therefore lost ground in favor of causal measures; the curet has lost its vogue since it has been shown that it had a curative influence in only 10 per cent. of 500 cases of uterine hemorrhage compiled by Busse. Mere bed rest alone may control uterine hemorrhage in women nearing the menopause and in young girls. In other cases a change of climate by improving the general health has cured the tendency to hemorrhages. Out-of-door life at a moderate altitude, saline and chalybeate baths may prove useful while mud baths often have a directly injurious action. Keeping the bowels open by proper dieting is of the greatest importance. The Roentgen rays have proved their usefulness in treatment of bleeding myomas, but it must be borne in mind that they act only on one symptom, the hemorrhages; the symptoms from traction by adhesions or pressure on adjacent organs are not influenced, and the danger of cancer is present in from 5 to 10 per cent. at least of all cases of uterine myoma. If roentgenotherapy is applied it should be only under the constant control of the gynecologist. Adler remarks of radium treatment that the dangers from it are so great and it is so impossible to reckon with them beforehand, that this method of treatment cannot even be suggested for uterine hemorrhage.

90. **Production of Protective Ferments to be Used in Treatment of Cancer.**—In this preliminary communication, Abderhalden describes some experiences which suggest the possibility that a prepared serum may be produced which will contain protective ferments able to digest cancer tissue and thus cure malignant disease. He suggests that the reason why such experiments fail in the test-tube is because there is no generation of protective ferments such as occurs in the living body under favorable conditions. The serum of his rabbits and dogs did not affect tissue from a rat sarcoma; then the animals were injected intravenously with an extract of the rat-sarcoma tissue. Twenty-four hours afterward their serum was found to have acquired the property of digesting the rat-sarcoma tissue, showing that protective ferments had been produced in consequence of injection of the tissue extract in question. Injection of this serum into the rat from which the sarcoma tissue had been derived, was followed by the gradual subsidence of the sarcoma after from three to six such injections. He has succeeded in causing the subsidence in this way of ten such tumors. These experiences harmonize with those of Fichera and others in regard to the curative action of autolysates of cancers. But Abderhalden thinks that equally effectual results can be obtained, while avoiding possible by-effects and other drawbacks, by transferring the task of protective-ferment production to a third organism, the horse, for instance. Experiments in this line are now under way.

Münchener medizinische Wochenschrift

February 3, LXI, No. 5, pp. 225-288

104 Radiotherapy in Gynecology. (Zur Strahlentherapie in der Gynäkologie.) M. Henkel.
105 *Jaundice, Especially as Sign of Extra-Uterine Pregnancy. (Ikterus.) H. Schottmüller.
106 *The Dialysis Test as Key to Clinical and Biologic Problems. (Notizen über die Verwertbarkeit des Dialysierverfahrens bei klinischen und biologischen Fragestellungen.) E. Abderhalden.
107 Adsorption Phenomena as Source of Error in the Dialysis Test. (Adsorptionserscheinungen bei dem Abberhaldenschen Dialysierverfahren.) E. Plaut.
108 Precipitating Action of Serum with Lipoids of Tubercle Bacilli. L. Preti.
109 One Dose of Emetin Cures in Case of Dysentery from Lamblia Intestinalis and Spirochetes. M. Mayer.
110 *Bacteriologic Control of Stools in Healthy Soldiers. (Eine Massenuntersuchung Gesunder auf pathogene Keime im Darm.) G. Mayer.
111 Only Eleven Per Cent. of 1,433 Syphilitics at Hamburg, 1908-1912, Took Adequate Treatment. C. Philip.
112 *Pain in Groin in Young Men. (Inguinalschmerz bei jungen Männern.) Spoerl.
113 *Endemic Goiter. (Studien über den endemischen Kropf.) L. Hirschfeld and R. Klinger.
114 The Tampon in Obstetrics and Gynecology. F. Weber. Commenced in No. 4.
115 "Second Sight." (Das zweite Gesicht.) W. Weber.

105. **Tendency to Jaundice as Sign of Extra-Uterine Pregnancy.**—Schottmüller emphasizes the important information to be derived from chemical and spectroscopic examination of the blood serum in cases of jaundice of obscure origin. The discovery of hematin in the blood serum served to confirm the suspicion of a ruptured extra-uterine pregnancy in one of the cases he relates. The spectroscope revealing the hematin indicated the necessity for an immediate operation, which was followed by speedy recovery; the history and palpation findings had suggested a benign ovarian cyst. In two other cases the small proportion of hematin, while confirming the diagnosis of extra-uterine pregnancy, yet showed that there could not have been much extravasation of blood, and both the patients recovered without complications or operation. He has encountered four cases of jaundice with extra-uterine pregnancy in the last year; the tendency to jaundice was evident only in the conjunctivas, but this was enough to suggest the hematinemia, and the spectroscope confirmed it. Urobilin was evident in the urine in some but not all of the cases.

He knows of a case in which a woman at the third month of supposed normal pregnancy developed pains which were ascribed by her physician to stomach derangement at first and later, on account of the increasing jaundice, to gall-stone trouble. The jaundice kept increasing, and finally, two weeks after the first symptoms, the possibility of intraperitoneal hemorrhage was considered. The laparotomy then on the moribund woman disclosed old and fresh blood in the abdominal cavity. If the jaundice had been recognized as resulting from destruction of blood, the proper diagnosis would have been made long before. Schottmüller has found only hematinemia with simple hemorrhage, while with infectious processes methemoglobinemia was the rule, easily distinguished with the spectroscope. He does not know whether this difference is constant. In one case recently, examination of the serum decided whether the symptoms presented by the patient were due to infarct or pneumonia; the hematin in the serum pointed to infarct. With pneumonia he has never found hematin, only bilirubin in the serum.

108. **Serodiagnosis by Dialysis.**—Abderhalden emphasizes a number of points which must be borne in mind in testing the serum for protective ferments, and urges careful record of details as to the tissues used for the test, as this alone will permit instructive comparison of the results. He gives a sample table showing the amount of serum used and each of the different tissues tested in turn, placenta, testicle, ovary, thyroid, thymus, adrenal, brain, liver, kidney, muscle, stomach lining, and liver-cancer tissue, followed by the clinical diagnosis (*a*) and the pathologic-anatomic diagnosis (*b*). In a healthy control there was no digestion of any of the tissues. In case of gastric cancer with metastasis in the liver, liver-cancer tissue and stomach mucosa tissue were the only ones digested. The serum from a pregnant woman with exophthalmic goiter digested placenta, ovary, thyroid and thymus tissue and left all the other tissues unmodified. One patient with exophthalmic goiter, whose ovaries had been removed some time previously, showed a positive response only with thyroid and thymus tissue. The serum from a patient after an accident which had crushed much muscle tissue, digested muscle tissue alone; from a woman with eclampsia, digestion was evident only in placenta, ovary, thyroid, brain and liver tissue; from a case of otitis media with an abscess in the temporal lobe, the only tissue digested was brain tissue. Serum from a man with dementia praecox digested placenta, testicle, ovary and brain tissue, while from another who had long been castrated brain tissue was the only one digested, and serum from a woman with dementia praecox, digested only ovary and brain tissue. He suggests that these protective ferments may be generated normally in the organ involved and be present there at all times; their passage into the blood under the influence of the morbid condition may be the specific anomaly.

110. **Examination of Stools for Pathogenic Microbes.**—Mayer reports the results of systematic examination of the stools of 6,020 troops at Munich and 178 elsewhere, all supposedly healthy and in healthy surroundings. In only three of the Munich men were pathogenic germs found, and in only two among the others. In these men paratyphoid or Flexner dysentery or Y dysentery bacilli were found, and no source for their infection could be discovered. Examination of 1,200 schoolchildren in 1910 showed paratyphoid bacilli in seventy-two. The five infected soldiers were kept away from all service requiring the handling of food but otherwise no distinction was made between them and the other men and no infection of others resulted. This was the case also in Mayer's previous experience with 158 healthy meningococcus carriers found among 9,111 healthy soldiers in 1910. The results of the wholesale examinations reported fail to confirm the assumption that the paratyphoid bacillus is ubiquitous. They reaffirm that in a normal, healthy environment *pathogenic germs have little power to affect others. If the* troops had been ordered into the field and undergone the privations and stress of a campaign, the five carriers might have proved a dangerous source of infection for others whose resisting powers had been depressed.

112. **Pain in the Groin in Young Men.**—Spoerl states that in dozens of cases in the course of his long practice young men about twenty have applied to him on account of pain in the inguinal region, alarming them as indicating impending hernia. A number had already provided themselves with trusses, but no tendency to hernia could be detected. Spoerl explains the pain as a kind of colic of the spermatic cord associated with neuralgia of the nerve which passes with the spermatic cord through the inguinal canal, and a truss is the worst possible measure in such cases. What is needed is light massage of the region with sedatives internally or in an anal suppository. Local injection of an anesthetic might also prove useful by the infiltration epinephrin technic.

113. **Endemic Goiter.**—This communication from Zurich reaffirms that it is not a fact that Rupperswil has ceased to be a focus for endemic goiter since the water supply was changed. This village has long been cited as the extreme type of a focus of endemic goiter, which was stated to have died out since the water-supply has been derived from a different geologic formation. Recent reexamination of the town disclosed endemic goiter still in 30 per cent. of the inhabitants, including many born since the water-supply was changed. A box of young rats from Zurich (where goiter is never endemic), was taken to Rupperswil and placed in charge of the children in a family in which nearly all the members had goiter. The water-supply was from the geologic formation which Bircher claims is free from goiter-producing properties. The rats were killed seven months and a half after their arrival in Rupperswil; one of the five brought from Zurich had pronounced goiter and three quite a tendency to goiter, while two of the four born since had pronounced, and one a tendency to goiter; the fourth was dubious. This experience apparently disproves the drinking-water theory of the origin of goiter, at least as formulated by Bircher. Another box of rats given in charge of a neighboring, but goiter-free, family, under similar conditions otherwise, gave constantly negative results. A goiter environment—local conditions must be incriminated rather than the water-supply. (See editorial, February 15, p. 538.)

Therapeutische Monatshefte, Berlin

February, XXVIII, No. 2, pp. 81-156

116 *History and Present Status of Vaccine Therapy. H. Schroder
117 Progress in Sterilization Technic. (Fortschritte in der Desinfektion.) K. Lauberheimer.
118 *Passage of Drugs Through the Placenta. (Uebergang von Arzneimittel von der Mutter auf den Fetus.) P. Jung.
119 Serotherapy by the Mouth in Suppurative Eye Affections. (Serumfütterung bei eitrigen Augenentzündungen.) R. Solm
120 Action of Astringents on Gastric Juice and Adsorption of Pepsin. I. Issraeliantz.
121 Acetone Treatment of Inoperable Uterine Cancer. E. Vogt.
122 Misleading Advertisements of Alypin. (Ein "falsches Inserat" über Alypin.) Ruprecht and F. Bruck.

116. **Vaccine Therapy.**—Schröder remarks that we are still far from Wright's prophecy of the physician of the future as "an immunizer." Preventive vaccination against small-pox and typhoid has proved its efficacy but until recently that against diphtheria was of too brief duration for much practical use. He thinks that Behring's new method, injecting a mixture of diphtheria toxin and antitoxin, under the guidance of the antibodies generated, seems very promising not only for diphtheria but for other infectious diseases. Schröder remarks that it may prove possible to utilize virus from sheep-pox or horse-pox or similar diseases, in which case the term "vaccination" would scarcely apply, and we should have to speak of "ovination" and "equinolation." He reminds the opponents of vaccination of the record of the Japanese armies in their two last campaigns in the heart of a country where small-pox is endemic. The Japanese were all thoroughly vaccinated and only 517 out of 1,000,000 soldiers developed small-pox, and only 69 died from it. Referring to bubonic plague, he says that eight millions have died from it in India during the last ten years, and that last year alone, 700,000 persons were given prophylactic inoculations. The experiences in the Dutch East Indies with this have been discouraging; the mortality among the vaccinated has been as high as among the rest of the populace.

The vaccine method of treating cancers—with autolysates—seems so promising that one session was devoted to discussion of it at the international conference on cancer-research at Brussels last August. Vaccine therapy of acne, furunculosis, chronic gonorrhea, etc., combined with other proved measures, seems to surpass in efficacy anything hitherto known. Strubell says it is ripe for adoption by the general practitioner, but Schröder thinks it had better be reserved as yet for institutions; he knows of no reports from general practitioners on record to date. Einsiedel reports 82 per cent. cured and 18 per cent. improved in his cases of furunculosis and in acne 16 per cent. cured and 84 per cent. improved.

Schröder classes under the heading of vaccine therapy Wagner von Jauregg's method of treating progressive paralysis with tuberculin or staphylococcus vaccine with which he and Pilcz have reported apparently encouraging results (as mentioned in abstract 68 above).

118. **Transmission of Drugs Through the Placenta.**—Jung reports in the course of his discussion of this subject three cases in which the children had evidently suffered from the toxic action of narcotics administered to the mothers on account of eclampsia. Two of the children died. The mothers had been given chloral by Stroganoff's prophylactic method of treating eclampsia; the eclampsia did not become severe in any, and the delivery was easy on account of the small size of two of the children; the other died the day before. In two other cases Jung ascribes the death of the fetus to the toxic action of an anesthetic injected by lumbar puncture to permit cesarean section. He says of the scopolamin "twilight sleep" technic, that it has been discarded nearly everywhere now except at Freiburg. The fetus seems to feel the cumulative action of the drugs. Mercury and potassium iodid long since proved their usefulness in this way, but the evidence to date is not conclusive in regard to arsenic and salvarsan. A trial should be made of quinin in case of high fever in the mother, hoping thus to reduce the temperature in the fetus which is liable to die from the hyperthermia; its temperature is normally a little higher than the maternal. Vaccination of the mother against small-pox does not seem to protect the child. Forty-three pregnant women were successfully vaccinated by Palm on an average 115 days before delivery, and thirty-three of their new-born infants vaccinated at once after birth responded positively; five others at the second attempt, and the last one at the fourth. Jung emphasizes in conclusion the necessity for further research to determine what drugs and antitoxins pass through the placenta, and the doses which the mother can take without injuring the fetus.

Zentralblatt für Chirurgie, Leipsic

February 7, XLI, No. 6, pp. 225-272

123 *The After-Pain with Local Anesthesia. F. Honigmann.
124 Ligation of Splenic Artery. (Ligatur der Arteria splenica bei fixierter Wandermilz.) O. Lanz.
125 Anastomosis between Gall-Bladder and Common Bile Duct. (Die Cysto-Choledochostomie, eine neue Gallenwegverbindung.) H. Wolff.

123. **The After-Pain with Local Anesthesia.**—Honigmann states that in 588 operations under local anesthesia, 32 per cent. of the patients had no pain in the wound afterward, and 43 per cent. had slight or bearable pain, while about 25 per cent. complained of severe pain in the wound. Analysis of the cases shows, however, that the after-pain is experienced usually only when the operation was in inflamed tissues or the parts were stretched or particularly rich in nerves. An operation for an ingrowing nail was followed by severe pain in all but eight of his seventy-four operations of the kind. Women are more subject to the after-pain than men. Honigmann makes a practice now of giving a small subcutaneous injection of morphin before commencing the anesthetization for operations in acutely inflamed tissues or when there is otherwise reason to anticipate much after-pain. This not only wards off the after-pain but helps to tranquilize the patient during the operation. He gives two sedative powders to outpatients, telling them to take one if they begin to feel pain in the wound later, and a second powder at bed-time if absolutely necessary. A milder sedative powder is given to those whose operations are of the kind only exceptionally followed by after-pain.

Zentralblatt für Gynäkologie, Leipsic

February 7, XXXVIII, No. 6, pp. 225-256

126 Dosage in Roentgenotherapy. Gunsett.
127 Means to Prevent Ophthalmia Neonatorum. (Wie kann die Blennorrhoe wirksam verhütet werden?) C. Hörder.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 5, XXXV, No. 16, pp. 161-168

128 *Fatal Santonin Poisoning. E. Magri

128. **Santonin Poisoning.**—A boy of 7 complained of not feeling well during the convalescence of a younger brother from scarlet fever. The mother diagnosed "worms" and gave the child a dose of santonin, probably 0.2 or 0.4 gm. in a little water. Four hours later the child suddenly became unconscious, with mydriasis and convulsions. The set jaws prevented lavage of the stomach, and the child soon succumbed notwithstanding the use of stimulants and oil enemas. Magri concludes his report of the case with the remark that, even at the best, santonin does not kill or expel ascarides but merely paralyzes them, and has no action on other helminths. He knows of the death of a child of 10 after taking 0.2 gm.—about 3 grains; another child 4 years old died from 0.3 gm. given fractioned in six doses.

Policlinico, Rome

February 1, XXI, No. 5, pp. 149-184

129 Caries of the Teeth in Children between Three and Six. (Frequenza di malattie dentali in mille bambini.) A. Chiavaro.
130 Appendicitis in Relation to the Female Genital Organs. U. Rolandi.

Riforma Medica, Naples

January 24, XXX, No. 4, pp. 85-112

131 Resection of Vagus in Relation to Gastric Ulcer. (La resezione intratoracica laterale del vago nei suoi rapporti con la patogenesi dell'ulcera rotonda dello stomaco.) L. Antonini. Concluded in No. 5.
132 Conservation of Serums for Wassermann Test. M. Trossarello.

Brazil Medico, Rio de Janeiro

XXVIII, Nos. 2-4, pp. 11-40

133 Fixation of Complement in Leishmaniasis; Three Cases. (Da reacção de Bordet e Gengou na leishmaniose.) C. Guerreiro.
134 Percussion of the Aorta from the Back. (Da zona normal de hyperphonese inter-aortico-auricular.) O. de Oliveira.
135 Ciliated Infusorians Found in Stomachs of Cattle. (Sobre os ciliados existentes no estomago dos ruminantes.) A. M. da Cunha.

Semana Medica, Buenos Aires

January 8, XXI, No. 2, pp. 57-116

136 Case of Aleukemic Cutaneous Lymphadenomatosis. N. Ragusin.
137 Syphilis of the Myocardium. A. Viton.
138 Dwarf Growth from Achondroplasia. (Nanismo familiar por afasia condral sistematizada. Mesomelia y braquimelia metapodial simetrica.) M. Bertolotti.

January 15, No. 3, pp. 117-172

139 Typhoid Fever. F. R. Torres.
140 Syphilis of the Bones. (Sifilis ossea.) J. A. Raices.
141 Treatment of Squint by Glasses. (Tratamiento orthoptico del estrabismo.) J. M. Zubizarreta.
142 Animal Magnetism from Medical Standpoint. (Mesmerismo.) G. Escobar.
143 Attenuated Criminal Responsibility. (La responsabilidad criminal y sus matices.) V. M. Farré.

Meditsinskoe Obozrienie, Moscow

LXXX, No. 20, pp. 731-818

144 The Thyroid in Connection with Deforming Arthritis. N. N. Iakunin.
145 Great Benefit from Benzol Plus Roentgen Rays in Case of Leukemia. E. V. Phlerin and M. N. Lukiantchenko.
146 Hottinger's Culture Medium. M. N. Shtutser and E. V. Phlerin.

Hospitalstidende, Copenhagen

February 4, LVII, No. 5, pp. 129-160

147 Production of Uric Acid. (Urinsyrens Dannelse hos Mennesket. III.) I. P. Chrom.
148 Child Born with Severe Manifestations of Syphilis Twenty Years after Infection of Mother. H. Boas.

Hygiea, Stockholm

February, LXXVI, No. 2, pp. 81-128

149 Two Years' Favorable Experience with Albumin Milk in Infant-Feeding. A. Lichtenstein. Commenced in No. 1.
150 *Blotting-Paper Capillary Analysis Test for Gastric Acidity. (Om den Holmgrenska kapillaranalysen.) H. K. Aberg.

150. **Blotting-Paper Test of Gastric Acidity.**—Holmgren's method of determining the proportion of free acid in the gastric content was described in The Journal 1911, lvi, 857. Aberg here reports extensive research with it striving to simplify and improve the technic. He thinks he has accomplished this by the use of tincture of cochineal for the indicator instead of congo red, as the color reaction is much more distinct and durable with the former. The use of lackmoid permits also accurate estimation of the total acidity, and by diluting the gastric juice even a very small amount will permit accurate findings.

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DANGER IN THE SUBCUTANEOUS INJECTION OF SOLUTIONS OF CROTALIN

WITH REPORT OF A FATAL CASE

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In a preliminary report in 1910, Dr. Ralph H. Spangler[1] reported the results of the treatment of eleven cases of epilepsy by injections with a solution of the venom of the rattlesnake (*Crotalus horridus*). In a second paper[2] he reported on fifty-one additional cases treated with rattlesnake venom. Since then there have appeared reports from others on the use of solutions of crotalin for the treatment not only of epilepsy, but also of certain other conditions, including tuberculosis, all based on purely empiric grounds.

I shall not discuss at this time whether or not rattlesnake venom is a cure for epilepsy, nor shall I enter into an analysis of the reported effect on the course of the disease of the venom treatment; but I think it proper to state that it hardly seems permissible to conclude from the published reports that the treatment was of any very great permanent benefit.

In the second paper Spangler gives certain information on the method of preparation of the venom solution, dosage, local reaction, and other matters connected with the treatment. The points which, at this time, mostly concern us are in regard to the solution and the local reaction.

It is stated in the paper that the solution used should be "as near a standard and as uniform as possible," and that it consists of the "dried, crystal-like scales, from the venom of *Crotalus horridus,* dissolved in sterile water, to which has been added a few drops of trikresol for its preservative and antiseptic effect." "This sterile, antiseptic solution" is dispensed in sterile ampules containing one dose each.

In view of what is said later it will be apparent to every one that a sterile solution is not always dispensed: on the contrary, solutions prepared, as suggested, have been found to contain dangerous bacteria, and death has resulted from the use of such a solution. If by a "standard, uniform solution" is meant a solution of uniform toxicity for equal weights of dried venom, it is difficult to understand how such a standard solution can always be obtained, especially since Noguchi states that different observers estimate that the loss in weight by drying of the fresh venom is from 25.15 to 50 per cent. Spangler states that patients vary greatly as to the swelling, erythema and cellulitis produced by the injection of rattlesnake venom, and that even in the same person great variation is noted in the local reaction. He says that at times $^{1}/_{100}$ grain will cause a more severe local reaction than will $^{1}/_{50}$ grain at another time. This to my mind is more probably an indication of the lack of uniformity in the strength of the venom solution than of variation in susceptibility of the individual. He emphasizes the statement that a good local reaction is necessary to produce a systemic effect, and that the "value of the treatment bears a direct relation to the presence of a satisfactory local reaction."

There can hardly be any doubt that a severe local reaction is likely to make a more profound psychic impression, but there also can be little doubt that a severe local reaction is more likely to invite secondary infection, and especially to favor the growth in the tissues of certain anaerobic bacteria such as were found in the tissues of the fatal case referred to in this paper. This brings up another very important point in regard to the dangers of the use on almost empiric grounds of rattlesnake venom for the treatment of certain diseases.

Weir Mitchell many years ago pointed out the great possibility of a secondary infection in a subject which survives the acute action of rattlesnake poison, and also called attention to the rapid decomposition following death from snake venom.

Welch and Ewing in 1893 showed that rattlesnake venom has the property of almost completely destroying the bactericidal power of the blood. This work was confirmed and extended by Flexner and Noguchi, so that we now know that the defenses of the body against bacterial invasion, even if it survives the acute intoxication of the venom, are greatly reduced or abolished by the *antibactericidal properties of snake venom.*

The patient on whom the venom is used, then, not only has the possibility of infection from the harmful bacteria that may be present in the solution of venom used for injection, but also is exposed to the liability of a secondary infection through the breaking down of the natural defenses of the body by the loss of the antibactericidal power of the blood consequent on the action of the venom.

Mention has previously been made of the death of an epileptic who had been receiving the venom treatment. This person died as a result of infection contained in a solution of venom which, when bought, was not sterile and which contained pathogenic bacteria. An abstract of the history of this fatal case is as follows:

W. H., aged 15, with negative family history, had never been a healthy, robust child, and for the past nine years had suffered from idiopathic epilepsy, which his mother states came on after an attack of malaria when 6 years old. During these nine years he had received treatment and been under the care of the best authorities which his parents could afford. In spite of this close care and attention his condition steadily grew worse and at the time of reporting for treatment he was having from twelve to sixteen attacks per month and his condition looked hopeless.

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[1] Spangler, R. H.: New York Med. Jour., Sept. 3, 1910.
[2] Spangler, R. H.: New York Med. Jour., Sept. 9, 1911.

His parents were very anxious to try anything which held out any hope for him, and at the suggestion of a friend of theirs they became interested in the crotalin treatment of epilepsy and asked to have the treatment administered. The crotalin ampules used in this case were obtained from a dealer, and in order to guard against any outside infection a very careful aseptic technic was carried out at the time of each injection and these injections were given as follows:

Injection	Date	Dosage grain
1.	January 18, 1913	1/200
2.	February 3	1/100
3.	February 8	1/ 75
4.	February 13	1/ 75
5.	February 18	1/ 50
6.	February 24	1/ 50
7.	March 1	1/ 50
8.	March 5	1/ 50
9.	March 10	1/ 50
10.	March 15	1/50
11.	March 19	1/50
12.	March 22	1/50
13.	March 25	1/50
14.	March 29	1/25
15.	April 2	1/25
16.	April 5	1/25
17.	April 9	1/25
18.	April 12	1/20

In all, eighteen injections were given and they usually were followed by a slight rise in temperature, pulse and respiration, and with considerable pain and swelling in the vicinity of the injection which would disappear in about three days.

The patient soon acquired a tolerance for the venom, which necessitated stepping it up rather rapidly until 1/50 grain was given. After receiving nine doses of 1/50 grain he acquired such a marked tolerance that very little reaction was obtained from the last two doses, and it was then increased to 1/25 grain for four doses, after which the last dose, 1/20 grain, was given, which caused death five days later. At times some of the treatments produced very marked reactions, causing at the site of injection considerable cellulitis, which would subside by the fifth day, while others were very mild in reaction.

The last injection, under careful aseptic conditions, was given in the biceps of the right arm about 2 p. m., April 12, and the following morning he had a marked epileptic seizure which was followed by six milder ones during the following eight hours. He was seen that day about 2 p. m., and found considerably exhausted from the seizures, temperature 100.5, pulse 84, respiration 24, and right arm considerably swollen and quite painful. An enema was given at once with good results, and scopolamin hydrobromid by the mouth every three hours.

April 14, temperature 99.5, pulse 80, bowels well open, arm quite painful and considerably more swollen than on previous day. Ice applied to arm.

April 15, temperature was 99.4, pulse 84, and swelling in arm about the same; but arm was very painful on the slightest movement; patient was taking nourishment fairly well and bowels were open. Veronal was given to produce sleep.

April 16, patient was very restless, and during the night the swelling had increased very rapidly and when seen at 9 a. m. it had extended up into the shoulder and right anterior chest wall. Temperature was 99.4, pulse 90 and pain very marked, and the heart was beginning to show the effects of an infection. Up to this time, owing to the low temperature and pulse, experience of previous reactions, and the very careful aseptic technic used in administering the venom, it was thought that the pain and swelling were due to an unusually severe reaction, but it was now evident that the patient was suffering from a rapidly progressing infection.

At 11 a. m., when the patient was transferred to the hospital, it was recognized that a fatal termination was probable, but multiple incisions were made. A quantity of extremely odorous pus liberated and drainage established. In spite of supportive treatment, however, death resulted on the morning of April 17.

A capsulated organism was found in the odorous material from the arm.

The crotalin ampules used for the last two injections were from a lot received April 7, 1913. Six of the remaining ten ampules from this lot were used for bacteriologic examination, with the result that an organism was isolated which, in its pathologic effect on laboratory animals, produced a condition similar to that observed in the patient, and was similar to the one cultivated from the pus from the patient's arm.

The laboratory findings set forth in the foregoing report show beyond a reasonable doubt that the death of this person was due to the presence in the crotalin solution of pathogenic bacteria. The chain of evidence implicating the crotalin solution as the cause of death is made almost complete by the finding in the remaining ampules of the same lot of crotalin solution of an organism similar, in its effect on animals, to the organism found in the pus from the fatal case.

After the death of this person from the crotalin injection other samples of crotalin solution were obtained from the same manufacturer and an organism was cultivated from those samples apparently identical in its effect on laboratory animals to that isolated from this fatal case.

The facts set forth above are evidence of the truth of the statement previously made that solutions of crotalin, as prepared and sold, are not always sterile; and that solutions which contain dangerous bacteria have been sold and death has resulted from their use.

As the preparation and interstate sale of solutions of venom come under the provision of the federal law approved July 1, 1902, regulating the manufacture and interstate sale of viruses, serums, toxins and similar products, it seemed that a study of venom solutions was a timely subject for the attention of the Hygienic Laboratory. Accordingly, samples of crotalin solutions, prepared by several different firms, samples of crotalin in tablets, and also a number of lots of dried rattlesnake venom were obtained from various sources. With these various materials cultures and certain animal inoculations were made. The samples of crotalin solution were bought in the open market and were such as would be obtained and used by any physician for the treatment of those conditions for which rattlesnake poison has been recommended. The solution was put up in sealed glass ampules, and, according to the labels, each ampule contained just one dose. The amount of venom in each ampule varied from $^1/_{200}$ to $^1/_{25}$ grain.

The samples examined were tested for sterility and for the presence of rattlesnake venom. The sterility test was made by planting 5 or 6 drops of the crotalin solution, usually in each of a pair of freshly heated glucose-broth fermentation tubes, which were then placed in the incubator at 37 C. (98.6 F.). With few exceptions, all of those tubes that showed a growth did so within twenty-four hours. This was usually manifested by clouding of the broth in the closed arm of the tube, accompanied by more or less gas formation, simetimes as high as 85 per cent. of the length of the tube.

Summarizing the results of the cultural work with the samples of crotalin solution, it is sufficient to state that there were tested for sterility ninety-five ampules of crotalin solution, prepared by four different firms, thirty-five of which (38.8 per cent), were found not to be sterile. It is proper to state that in the great majority of instances the contamination of the crotalin was found to be with anaerobic organisms, and to all appearances usually with a certain anaerobic bacillus.

In addition to the samples of crotalin solution reported on above there were examined twelve tablets of crotalin prepared and sold for hypodermic use. Every tablet examined was found not to be sterile, and while the contamination was shown to be due to more than one organism, in each tablet, however, an anaerobic bacillus was obtained.

The test for the presence of venom was made by the subcutaneous inoculation of the contents of ampules from each lot of venom solution and of tablets. Guinea-pigs weighing about 200 gm. were used. As controls, guinea-pigs were inoculated with similar amounts of freshly prepared solution of venom from four different sources. In every sample of crotalin solution or tablets examined the presence of rattlesnake venom was shown by an effect on animals similar to that produced by the control inoculations of freshly prepared venom solutions.

An attempt was made in these tests to determine whether there was a variation in the activity of the solutions prepared by the same or different manufacturers or in the solutions prepared in the laboratory from different lots of crude venom. It was found that it was not possible without the use of a very large number of animals to determine the extent of variation, but it was definitely demonstrated that a variation in the solutions did exist. This variation was found to exist, not only in the solutions bought on the open market, but also in the solutions prepared from the four lots of crude venom from different sources. This is not unexpected in view of the previous reference to Noguchi's statement as to the variation in loss of weight in crude venom by drying, and shows anew the difficulty of preparing solutions of uniform venom content for equal weights of different lots of venom.

In the testing of the different samples of crotalin solution bought on the open market for the presence of crotalin, it was found that some of the animals died from infection with the contaminating bacteria found by cultural methods to have been present in the same lot of crotalin. For example, a guinea-pig received the contents of an ampule marked to contain 1/100 grain of crotalin. About twenty-five and a half hours after the injection the animal was found dead. At necropsy the body was found swollen and emphysema was present in the tissues of the neck. A sanious fluid was oozing from the puncture made by the injecting-needle. The abdomen was distended with gas and the liver was pale, mottled and showed areas of gas bubbles. The thorax was distended with gas. Cultures were made from the heart's blood in glucose-broth, and these cultures showed gas formation in the closed arm of the tubes. This fermentation was believed to have been due to an organism similar to that isolated from the crotalin solutions.

A few tests were made to determine the variety and number of bacteria in freshly prepared solutions of crotalin made from dried snake venom, but it was found, as has been previously shown by others, that the bactericidal properties of the venom interfered so much that the results were unsatisfactory. The same, of course, was true of the solutions of crotalin bought on the open market, but in these there was an additional complicating factor present. Most, if not all, of the solutions of crotalin sold contain trikresol as a preservative, and this acts as an additional restrainer of the growth of any bacteria that may be present in the solutions.

These two factors—the bactericidal power of the venom and the antiseptic power of the preservative—have an important and, it is believed, neglected, bearing on any sterility tests that may be made by the dispensers of crotalin solutions. I think it can be accepted that the dried venom always contains a great or less number of bacteria. This must be so when we consider the habits of the reptile from which the venom is secured and the methods used for obtaining it from the snake, and of drying and preserving after it is obtained. Such being the case, it is of course fully apparent that cultural tests, unless very carefully done, may not always reveal the presence of bacteria, which it has been shown may sometimes be harmful, when they are present. This possibility of there being present pathogenic bacteria difficult of detection, taken with the further fact that one of the effects of rattlesnake venom is to reduce or abolish the normal bactericidal power of the body-fluids, emphasizes the possibility of serious harm from the subcutaneous injection of solutions of rattlesnake poison.

To the two dangers just mentioned there should be added that of the favorable conditions for the growth in the area injected of anaerobic bacteria by reason of the local necrosis of tissue from the specific action of the venom thereon.

Subcutaneous injections of crotalin solutions have been recommended for a great variety of morbid conditions differing as widely in their etiology and pathology as epilepsy and tuberculosis. Among the conditions for which it has been advised may be mentioned epilepsy, lumbago, sciatica, neuritis, neuralgia, chorea, nerve exhaustion, bronchitis, asthma, hay-fever, insomnia, debility, pleurisy and tuberculosis, and there may be others. This is truly a formidable list for any therapeutic agency to control, and until more weighty evidence is produced than is at present available as to the value of the treatment for these so diverse conditions it would seem that the possible dangers inherent in the treatment itself should demand the utmost caution in its use.

THE INFLUENCE OF DIET ON HEPATIC NECROSIS AND TOXICITY OF CHLOROFORM *

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The destructive action of chloroform on the cells of the liver has long been recognized. Chloroform administered in sufficient quantity to animals by inhalation or by stomach causes necrosis implicating the center of each lobule of the liver, perhaps extending four-fifths of the distance from the central vein to the surrounding portal spaces. The poison exhibits a peculiar affinity for the hepatic cells, for, whereas parenchymatous cells of other organs such as the kidney and heart undergo injury exhibited by fatty degeneration, wide-spread necrosis is limited to the liver.

The occurrence of the same change in man is demonstrated by delayed chloroform poisoning, which occasionally follows the administration of chloroform for anesthesia. In association with excitement, delirium, coma and other symptoms referable to the nervous system, jaundice appears and increases in severity. Crystals of leucin and tyrosin in the urine may suggest advanced protein disintegration referable in the presence of jaundice to disintegration of hepatic tissue. After death the liver is enlarged and exhibits advanced necrosis beginning in the centers of the lobules.

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Numerous observers following Strassmann and Salkowski have shown that administration of chloroform by inhalation or by mouth is followed by increased elimination of urinary nitrogen, sulphur and phosphoric acid. Howland and Richards, reproducing delayed chloroform poisoning in dogs, have shown that necrosis of the liver is associated with the increased elimination of sulphur and nitrogen which accompanies intense disintegration of body protein.

Chloroform was selected as an example of a poison capable of causing death and disintegration of hepatic cells, and experiments were undertaken to determine if protein disintegration might be modified by diet. These experiments were made on white rats since preliminary experiments determined that the fatal dose of chloroform for these animals could be determined with fair accuracy. Chloroform was diluted with two parts of paraffin oil selected as an indifferent substance absorbed with difficulty. In a preliminary experiment, a dose approximately 0.2 c.c. per hundred gm. of body-weight failed to kill; from 0.3 to 0.5 per hundred gm. killed in four days; 0.6 in two, and 0.7 in one day. Irregularities in the action of the poison were occasionally seen.

In the series recorded in Table 1, animals were given during four days (*a*) oats and cane-sugar, (*b*) meat alone or (*c*) fat (of beef) alone. On the three diets the average body-weight of each group of animals was maintained. Table 1 gives the length of life in days of the animals which died.

TABLE 1.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Chloroform per 100 gm. c.c.	Oats and Sugar	Meat	Fat
0.1	*	3	2
0.15	3	4	1
0.2	7	3	2
0.25	*	2	2
0.3	4	3	2
Average duration of life	4⅔ +	3	1⅙

*Lived.

Animals which received carbohydrates survived, whereas all of those which received meat and fat died. Difference in toxicity is further shown by the average duration of life of animals which survived after the various diets. Microscopic examination of the livers of the animals which died showed that necrosis was scant in animals which had received a carbohydrate diet, implicating one-third or one-fourth of the radius of the liver lobule, whereas in animals which received meat or fat, necrosis affected from two- to three-fifths of the lobules, destroying at least half in all save two instances. Necrosis is found in all animals which died within four days after intoxication.

The foregoing experiments suggested that smaller doses of chloroform might demonstrate greater differences referable to diet. In view of the rapid fatality after administration of fat the minimum dose with this diet was placed at 0.02 c.c.; from previous experiments it was assumed that animals receiving carbohydrates or meat would survive this dose. After six days on the various diets animals which had received carbohydrates lost an average of 4 gm. each, those on meat maintained their weight and those on fat lost an average of 15 gm. each (Table 2).

Three times the fatal dose for animals receiving fat (0.05 c.c.) is survived by animals which have received a meat diet, whereas five times this dose is survived by animals which have been fed on starch and sugar. The experiments are in accord with the observations of those (as Shaffer and Coleman for typhoid fever) who have shown that carbohydrates prevent the disintegration of body proteins. The average duration of life of those which survived furnishes further evidence of the protective action of carbohydrates and the injurious effect of fat. Advanced necrosis of the liver was found in those animals which died after receiving meat and fat, and serves as an index of the severity of intoxication.

TABLE 2.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Chloroform per 100 gm. c.c.	Oats and Sugar	Meat	Fat
0.025	..	..	*
0.05	*	11	3
0.1	10	*	1
0.15	*	*	1
0.2	*	3	2
0.25	*	3	2
Average duration of life	10+	5⅔ +	1⅙

* Lived.

Since animals of the foregoing series which received fat alone exhibited a loss of body-weight, the experiment was repeated by adding fat to a carbohydrate diet. To one group of animals beef-fat inseparably mingled with rolled oats was given; to another group which received as much oats as they would eat, cottonseed-oil (1 c.c. daily) was administered by mouth. The average body-weight in each one of these groups was slightly increased after five days. At the end of this time chloroform was administered (Table 3).

TABLE 3.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Chloroform per 100 gm. c.c.	Oats and Sugar	Meat	Oats and Beef-Fat	Oats and Cottonseed Oil
0.05	*	2	2	*
0.1	*	5	*	2
0.15	*	3	2	2
0.2	*	3	2	2
0.25	*	*	2	4
Average duration of life	..	4¼ +	2+	2½ +

* Lived

The protective action of carbohydrates is conspicuously shown. The difference between the effect of meat alone and of fats combined with carbohydrates is not so great as the difference in the influence of meat and fat alone, the protection afforded by carbohydrates combined with fat being evident. Nevertheless the average duration of life among animals which survived exhibits the dangerous influence of fat.

CONCLUSIONS

The experiments furnish evidence that fat administered to animals and presumably stored in part in the liver increases the susceptibility of the organ to the injurious action of chloroform. In view of the well-known solubility and diffusibility of chloroform in fats, they suggest that the fat of the liver-cell determines the fixation of chloroform and occurrence of necrosis. The experiments with carbohydrates, on the contrary, furnish confirmation of the views of those who maintain that carbohydrates protect the body proteins from disintegration. Since necrosis of the liver with a variety of conditions in man, namely, toxemia of pregnancy, acute yellow atrophy of the liver, yellow liver, and poisoning with a variety of substances, exhibits close similarity to the necrosis of chloroform, the foregoing experiments suggest that a carbohydrate diet may be found to influence favorably the course of these diseases, whereas fat may have grave danger.

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WHAT IS A COMPLEX?*

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It may be assumed in psychology, just as in physics, that the law of cause and effect holds good. Every idea, impulse and feeling that appears in our consciousness, every action we perform, may be supposed invariably to have an adequate antecedent cause. None of the phenomena of either normal or abnormal mental life are to be regarded as simply the result of accident or of chance.

But the causes of many psychic phenomena are not self-evident. Though our conduct and opinions are popularly supposed to be the result of logical conscious thought and reasoning, and we are therefore expected to know why we believe or behave in any given manner, we frequently lack this knowledge. Many of the things we do and think we are utterly unable to explain: our explanations of many others are obviously unsatisfactory.

The truth of the matter is this: The causes of many of our activities, or the factors which help to cause them, lie outside the field of our consciousness, and are inaccessible to ordinary introspection. We therefore cannot hope to explain every conscious phenomenon as the result of some other conscious phenomenon, and if we wish to regard our psychic activities as conforming to the law of cause and effect, we must look for these unconscious causes and give them a place in our explanations.

Take, for example, such a matter as religion. We may safely assume that very few persons adopt a given form of faith simply and solely because they have studied the matter carefully, compared the relative merits and nonmerits of all religions, and finally arrived logically at a conviction of the superiority of the one in question. Few indeed can satisfactorily explain through introspection why they believe and behave as they do in such matters. Yet to even the lay mind there is no great mystery about it. For when, for instance, a person is a Protestant, it is ordinarily supposed that he was caused to be so by what is popularly termed his "bringing up." That is, it is assumed that a large number of experiences which he has undergone, and of influences to which he has been subjected, have somehow prejudiced him in favor of the particular religion he has chosen and are really responsible for his choice. This does not mean, however, that he *remembers* all these experiences or is clearly conscious that they are influencing him. On the contrary, it is supposed that the impressions having perhaps the greatest influence are the ones that relate to the moral and religious instruction he received in childhood, and these can be recalled only imperfectly, and many of them not at all. It is quite obvious, therefore, that if we are to explain *why* a person has accepted a given religion we have ordinarily to take into account such factors as those just mentioned. We have to assume, in short, that there exists a non-conscious biasing agent which is probably the most important factor in determining his choice.

If we now attempt to formulate some conception of this biasing agent — of this particular unconscious cause of belief — our results will be somewhat as follows: We shall expect it to be a very large group of memory traces, ideas and feelings connected in various ways with the central theme of religion. Some of these presumably had origin in the various incidents of early moral instruction from the parents, of intimate family life, of childhood visits to church and Sunday-school, or in different vague perceptions of things wonderful and mysterious. Others resulted from various allied experiences occurring throughout the person's later years. Some of the elements of the group are doubtless recalled frequently, others seldom, a great many others never. That is, the biasing agent consists very largely of unconscious ideas.

We may also suppose that because of their intimate correlation, the ideas and feelings belonging to the group have a tendency to exert their influence in conjunction, instead of as so many separate and distinct elements; that the person's choice of religion, and, we might add, his corresponding behavior, probably depend on the action of the group more or less as a whole and not on that of a separate few of its constituents.

Such a system of connected ideas, having a strong emotional tone, and displaying a tendency to produce or influence conscious thought and action in a definite and predetermined direction, is called a "complex." Complexes, then are sources of activity which, in part at any rate, lie outside the field of consciousness, and are at most only imperfectly accessible to voluntary introspection.

A great part of our conscious activities are determined in some degree by idea-groups of this kind. For not only in matters of religion, but in relation to practically all our chief emotional interests, complexes exist which influence, in their characteristic way, the trend of our thoughts, acts and feelings. Thus we have complexes concerning the different members of our families; complexes relating to each one of our important loves, hates, ambitions and recreations, and complexes concerning our politics, patriotism, pride, morality, etc. Each one of our instinctive tendencies, each of the deeply rooted cravings or impulses that have descended to us through long ages of phylogenetic development has, built up around it, a complex.

All our complexes are, so to speak, in a state of tension; each is ready to react in its own particular way as soon as the appropriate stimulus comes. And so numerous are our complexes that, with their readiness to react, we are seldom free from the influence of one or more of them. Almost any experience of daily life capable of awakening a considerable degree of interest or feeling is quite certain to stimulate some complex or other, and affect the content consciousness accordingly. All this, to be sure, may be not self-evidently true to most of us, but perhaps when we consider the examples of complex-action which are to follow, the foregoing statements will not appear unreasonable.

We may begin with a very simple illustration of complex-reaction. By a question of comparison between the Protestant and Roman Catholic religions, the religion-complexes of the adherents of both churches would be stimulated, and the reactions of a given individual would depend on which of the two kinds of religion-complex he happened to possess. If, for instance, he were a Catholic, and a question were brought up as to the value of the religious confession, all the arguments in favor of confession would probably impress him as being very potent and weighty, while any against it would be likely to seem to him unconvincing, no matter how logically they might be presented. In other words, his judgment on this question is predetermined long before the question comes up. The Protestant, on the other hand, would be inclined toward a prejudice in just the opposite direction. The very arguments that the Catholic regarded as so convincing he would consider weak.

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* From the Department of Neurology, Cornell University Medical College.

* Read before the New York Academy of Medicine, Section for Neurology and Psychiatry, Oct. 14, 1913.

The fact of the matter is this: In neither case does the individual escape the prejudicing influence of past impressions. Throughout early years both Catholic and Protestant had received from the sources he then regarded as most authoritative innumerable statements, implications and suggestions that Catholicism or Protestantism, as the case might be, was *the* religion superior to all others, and never to be questioned or doubted. But though the sources of these impressions may have lost their early stamp of authority, and though the impressions themselves have for the most part sunk below the level of conscious recollection, their influence to some degree remains. Any judgment involving directly or indirectly a comparison of the chosen religion with some other cannot be made altogether independently of the effect of this great group of impressions and feelings. In other words, a person's religion-complex tends to influence his judgment, fetter his logic, and — giving undue prominence to all arguments in harmony with itself, undue triviality to those in discord — operates toward making his final opinion on all matters connected with religion a foregone conclusion.

This brings us to another matter of much interest. Suppose in the question of the value of confession the Catholic has reached an affirmative conclusion. Now, he might realize that his "prejudices" were partly responsible for this conclusion, and frankly admit that such was the case. This would mean that he was in a sense aware that his religion-complex had directed the action of his mind. But, on the other hand, he might believe that his affirmative conclusion was determined solely by the merits of the case, and that he had not allowed his judgment to be biased in any way whatsoever. This, however, would ordinarily mean simply that he had not realized that his complex was acting, and that to logic and reason alone he had attributed results for which the complex was in part responsible; but in such a case he would not hesitate to point out a certain train of reasoning, and to explain, quite sincerely, that this was the cause of the final mental act, his conclusion. That is, he would manufacture a train of reasoning and accept it as the cause of his belief.

These synthetic, retrospective explanations of mental or physical acts are very common. Thus a teacher who has punished a child for some fault committed in school would explain that she had been actuated by a desire for the child's good, and might be quite sincere in doing so. Nevertheless, a revenge-complex built up by the many little annoyances he has caused her may quite possibly have been the most important basis for her action. A man who refuses to give money to a beggar feels that he does so because of an unwillingness to encourage laziness. In reality, his money-complex may have been the chief determinant of his conduct.

This sort of self-deception, which attributes a complex-determined opinion or action to some other and generally more acceptable cause, is known as *rationalization*. Its advantages are obvious. It permits the none too altruistic tendencies of some of our complexes to express themselves under the guise of activities having their source in thoughtful consideration and moral precept, and at the same time it allows us to hold to the pleasing opinion that our behavior is directed and controlled by purely intellectual forces instead of by what we slightingly term "impulse."

The extremes to which rationalization is carried are sometimes very great. This the following example may serve to show: Once when stopping in the country and having occasion to go to the house of a certain elderly lady, I was surprised to see a very valuable dog tied at her door-step. On my speaking of the animal, she told me it had strayed into her yard some weeks before, and that in this manner she had come to possess it. I asked, quite innocently, if she had been unable to find its owner, whereupon she replied with vigor that she had made no effort in that direction, adding that it would have been "a sinful flying in the face of Providence" for her to do so, because God would never have allowed the dog to stray into her yard if He had not intended that she should keep it.

The advantage of the rationalization in this case is quite apparent. For although perhaps no one else would have regarded a pious unwillingness to interfere with the plans of the Almighty as the real cause of this lady's conduct, she believed that it was, and thus she was enabled to give expression to her acquisition-complex and to maintain a comparatively easy conscience at the same time.

This example brings us to a matter of great importance, namely, conflict between complexes. In the case of this lady a conflict between her religion-complex and her acquisition-complex was narrowly avoided only by virtue of her rationalization. In by no means all cases, however, can such easy solutions of conflict be secured. This is particularly true of the conflicts which arise between the powerful complexes represented by morality, on the one hand, and by certain of the erotic and, so to speak, savage impulses, on the other. It is in conflicts of this kind particularly, that one of the two following things may occur:

First, the antimoral complex is overcome, is excluded from consciousness and becomes an unconscious, or *repressed complex*. In such cases — particularly if the repressed complexes are strong and the repression is maintained with difficulty — there sometimes occurs an exaggerated activity on the part of the repressing complexes. This is known as "overcompensation." Thus an exaggerated piety and morality may result after the repression of powerful temptations; an exaggerated sympathy may conceal repressed inclinations to brutality, or an exaggerated affection may cover unconscious complexes of hate.

Secondly, a sort of compromise may be effected between the opposing complexes by both discharging themselves in a single set of mental or bodily activities which somehow permits simultaneous expression of the discordant tendencies which the two complexes possess. This compromise may occur after a period of complete repression of one of the complexes (hence corresponding to a partial failure of a once successful repression), or may be formed at the time the conflict begins.

A simple example of compromise is as follows: At about bedtime one evening it suddenly occurred to a young woman that her husband was not getting sleep enough. Immediately she became worried, and she soon had herself wrought up to such a pitch that she could not banish this distressing idea. As a result she kept her husband awake until nearly 3 o'clock in the morning. Thus, in one set of activities she simultaneously expressed a love-complex and a hostile complex.

The most striking examples of compromise between complexes are furnished by the psychoneuroses. As an illustration the following brief extracts from the history and analysis of a case of compulsion-neurosis are perhaps in order:

> Mrs. P., aged 25, married seven years, suddenly developed an obsession. The circumstances were as follows: She was sitting one morning at her window, gazing for no apparent reason at another young woman, a perfect stranger, who occupied a window across the street. *Suddenly, without warning,* Mrs. P. began to experience a peculiar feeling of uneasiness, sadness and fear. Then she made the remarkable discovery that she was unable to stop thinking about the woman across the way. *And this state of affairs continued. No matter* what she did, where she went or how she occupied herself the image of her neighbor remained fixed before her mind, continually absorbed her attention, and made it impossible for her to direct her thoughts to other things. She exerted every effort to control herself and to forget her obsession, but to no avail. Meanwhile she was subject to profound depression and anxiety, and became more and more fearful that if she could not stop thinking of the other woman she would eventually go insane.
>
> This obsession lasted about a month and then gradually subsided. After an interval it reappeared, remained for a while, and again subsided. This was repeated a number of times during the four years before I made her acquaintance. Other obsessions and certain phobias, which need not be mentioned here, appeared from time to time, and the original anxious depression persisted.
>
> In addition she developed two compulsions which are of much interest as examples of complex-activity, although they gave her no great distress. The first was a compulsive desire to alter her clothes. Thus at any time she was likely to be seized with the idea that her skirt did not fit her properly, and that she must try to improve it. Immediately she would be compelled to abandon whatever she was doing, rip up the garment in question, and make plans for its alteration. It was practically useless for her to resist this impulse for, if she did so, she would remain in an almost unbearable condition of tension and anxiety that could be dispelled only by her finally giving in. The impulse occasionally came on her as often as six or eight times in a single day. As a rule, however, it appeared at much longer intervals, and as soon as she gave way to it, she would be for a time relieved of any inclination toward its repetition.
>
> A second impulse which was apt to appear in close temporal proximity to the first was an intense craving to be out in the rain. In stormy weather she would suddenly feel that she could not bear to be in the house, that she *must* go out and get wet. She would then leave the house in her ordinary street clothing, and, after sitting or walking in the rain until she was thoroughly soaked, would return home feeling greatly relieved and satisfied.

Now these obsessions, phobias and compulsive acts of which the patient complained were, like all psychoneurotic symptoms, produced by the activity of conflicting complexes. The morbid phenomena represented compromises formed between opposing affectively accentuated groups of ideas which, neither side being powerful enough to completely inhibit the action of the other, originated a set of activities in a new direction corresponding to a resultant of their combined forces. This, I think, will be made clear by the following extracts from my analysis of the case:

The complex which was mainly responsible for the foregoing symptoms had as its central element a strong desire for children. Much to her disappointment the patient had never been pregnant. She believed the fault lay with her husband. She had been examined a number of times and had been assured that nothing was found to account for her failure to conceive. On the other hand, her husband had been married before and his first wife, like herself, had never been pregnant. In addition, as the patient well knew, he had had a great many affairs with women not only before his first marriage, but even after his second, and it was therefore by no means improbable that his procreative power had been destroyed by venereal disease. On several grounds, then, she had reason to suppose that her marriage would remain a childless one.

In this way a conflict arose between various complexes. Her maternity-complex prompted her to do one of two things: either to divorce her husband — a thing she would have had no difficulty in doing — and marry some other man who could gratify her desire for children, or to be unfaithful to her husband in the hope that pregnancy might result. The latter course had the advantage of a compromise — she could have a child without giving up her husband — and her inclination to pursue it was reinforced by the reflection that he had not hesitated to be unfaithful to her.

On the other hand, her morality-complex, and the complex representing her love for her husband (of whom in spite of his shortcomings she was extremely fond) strongly opposed the tendencies arising from her maternity-complex and sought to repress them. This repression for a time succeeded. The objectionable ideas and inclinations belong to the maternity-complex were quite successfully excluded from the focus of her consciousness, and she believed herself to be more satisfied with her marriage than she actually was.

In time, however, the repression gave way. A compromise was formed which consisted in allowing the repressed psychic activities belonging to the maternity-complex to come before her consciousness, but in a new guise — namely, as obsessions.

The form taken by the obsession described was determined by the fact that the idea of the house across the street formed, as it were, a center about which some of the important conflicting thought-groups were constellated. The woman to whom this obsession referred was one whom Mrs. P. was compelled to envy. Until two weeks before Mrs. P.'s obsession developed this woman had displayed all the outward signs of pregnancy. The day the obsession developed was the first that this woman, having given birth to her child, had returned to her accustomed place in the window. One factor, then, in directing Mrs. P.'s thoughts to the house opposite was her pregnancy-complex. Another factor having the same effect was the complex relating to her husband's infidelity and to the idea of divorce, for she had recently learned that in this same house there resided a woman with whom the ever-active Mr. P. had been frequently indulging himself.

A third factor, which has not been referred to previously, was a well-developed homosexual complex. It so happened that the young mother was of a type that not only strongly appealed to the patient, but also included another girl with whom in former years she had had homosexual relations.

Mrs. P.'s inability to stop thinking about the woman across the street represents, then, her inability to banish completely from her mind the activity of those complexes that made her dissatisfied with her life and with her husband. For, as we have seen, this woman could readily stand as a symbolic figure for all those forces tending to draw Mrs. P. away from her husband. The obsession may therefore be translated somewhat as follows: "*If* I could forget my neighbor across the street I could be happy with my husband."

The patient's two compulsive desires are also compromise formations derived from her maternity-complex. The compromise consists in the substitution of an indirect and symbolic action for the direct action of this complex.

The analysis of these compulsions finally led to the following memory: During the patient's eighth year an older girl, who appears to have been a veritable storehouse of information and misinformation on the subject of sex, came to her and offered to demonstrate the method by which children were made. The patient, promptly accepting this offer, was instructed to lie down and lift her skirts. The older girl then lay on top of her and discharged a stream of urine against her genitals. "Getting wet" thus came to be a symbol of impregnation. Naturally, this symbolism received support from the patient's observing that rain seemed to have the effect of "making things grow," and, incidentally, rain became symbolic of a fertilizing substance.

The two compulsions — the desire to get wet and the desire to alter her clothes — came on after Mrs. P., having been caught in a shower accidentally, found that her skirt shrunk to such an extent that she had to rip it up and make it over before she could wear it again. In other words, these compulsions came on after an experience which was symbolic of insemination (getting wet by rain), and which was followed by a phenomenon analogous to one of the manifestations of pregnancy (namely, tightness of the clothing which suggests abdominal enlargement).

It is now to be seen that the patient's singular dissatisfaction with the fit of her clothes depended not on any fault possessed by them, but on the shape of the figure they covered, which never exchanged its virginal slimness for the temporary deformity of pregnancy. The act of altering her clothes was therefore a symbolic substitute for another action prompted by her maternity-complex, which would have changed the fit of her clothes by physiologic means operating from within.

The compulsion to get wet had the same significance. It was a symbolic substitute for that real exposure to fertilizing fluid for which she so longed (rain = semen).

Now lest these last examples of complex activity leave a wrong impression, I shall close by saying that *everybody* has complexes, and that the normal do not differ greatly from the sick in regard to what these complexes contain. Neurotics, to paraphrase Jung's dictum, are merely those who fall sick from the same complexes with which normal people struggle.

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Trained Leadership in Health Administration. — Health administration in this country lags largely for want of trained leadership. The call to public health is loud and clear. Preventive medicine is the watchword of the hour and the people are asking: "If disease is preventable, why is it not prevented?" They are not satisfied with promises, but demand results; this is as it should be. It is now recognized that the orthodox training leading to the degree of M.D. does not necessarily fit a man for the position of health officer. The average practitioner learns little concerning vital statistics, sanitary engineering, water purification, sewage disposal, disinfection, forensic medicine, and the making and breaking of health laws. The public health officer looks on disease in the large, and is less interested in the individual case, which is the chief concern of the practicing physician.—M. J. Rosenau in *Vermont Med. Month.*

ARTIFICIAL PNEUMOTHORAX

A SUMMARY OF FORTY-FIVE CASES AT BEDFORD

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The induction of artificial pneumothorax was first attempted at Bedford in January, 1913. At that time Dr. Cleveland Floyd of Boston demonstrated the technic of this procedure for us. Since then this operation has been used in forty-five cases, in many of which the patients were in desperate condition. A complete pneumothorax was obtained in twenty-one cases and a partial pneumothorax in eighteen cases, while in six cases we failed absolutely to find the pleural cavity.

Eight cases have given brilliant results. By this is meant marked reduction in temperature, in the pulse-rate and in the sputum output, gain in weight, etc. In hyperpyrexia the results have been most striking. In two such cases this was achieved within five days with two inflations, while in two other similar patients the same result was accomplished in four and five weeks, respectively. Previously in all these cases there had been pyrexia continuously for periods varying from three to eight months, and in addition the patients had suffered from great loss of weight, chills and sweats. In all of them the temperature has remained low or normal ever since, a length of time now varying from six months to one year. In three others we have arrested advancing and very active processes, and all three are now continuing to do well. One of them has lost his bacilli for a period now of three months. This is the only instance in our series in which positive sputum has become negative during an appreciable period of time.

In six cases we failed to introduce gas into the pleural cavity even after as many as ten attempts. In several we had rather strange experiences. On insertion of the needle we obtained very good and high negative oscillations in the manometer. As the nitrogen was allowed to flow into the chest, the intrapleural tension, according to the manometric readings, became less and less negative up to a certain point, and at this point we obtained readings that were equally positive and negative. In two such cases, as much as 1,800 c.c. were administered, and on physical examination we were surprised to find absolutely no change in the chest signs. In addition fluoroscopy and skiagraphy failed to reveal any evidence of pneumothorax. Probably in these cases the parietal and visceral pleurae were adherent and the needle went through into a bronchus and the nitrogen was lost. With the needle in the lung parenchyma we should have obtained very slight oscillations; but we obtained very good oscillations. This occurred many times, but we still persisted and inserted our needle in many different spaces, in one case going into the first and second right interspaces (this was never repeated in any subsequent case). In one of these cases the Brauer method was used—an incision down through one of the interspaces till the dull gray surface of the parietal pleura is laid bare—only to find the pleura a mass of adhesions and full of small pockets.

One point has impressed every physician connected with our institution—the persistent loss of weight in so many of our cases, and this, despite the fact that their subjective symptoms are so markedly ameliorated.

This has occurred in eighteen (85 per cent.) of our complete pneumothorax cases. Of the patients only four have regained all of their loss, while the rest are still many pounds minus the weight they possessed when treatment was instituted, though many have regained some of their loss. Strange to say, in four of these cases the patients began to put on flesh only after cessation of this operative procedure.

In regard to dosage every case is a law unto itself. Several factors always influence us. First and foremost is the patient's comfort. As soon as he complains of the least dyspnea or pain we immediately stop the flow of gas, irrespective of the amount of nitrogen injected. Secondly, we depend on the manometer—we never let gas flow into the chest till we have good oscillations. Occasionally we have proceeded cautiously in the presence of an initial low positive reading, and in these cases, after inflations of a small amount, we have been gratified at the next attempt on finding high negative intrapleural tension, adhesions in the meantime probably having given way. In the initial inflations we stop while the readings are still negative. On subsequent occasions we wait for low positive readings unless very large amounts have already flowed in. With the first positive reading, however, as a rule we discontinue the inflation. For a long time, though, in some cases we continued inflating till a moderately high pressure was obtained. At present we stop with a low positive reading in all of the later inflations.

At first we inflate from every two to five days. In a few cases we have administered nitrogen every day for three days till a fairly good pneumothorax was obtained. Small doses frequently repeated seem to be the best method by far. With a complete pneumothorax we wait from ten days to a month before reinflation, keeping watch all the while on the rate of absorption by means of physical examination, fluoroscopy and an occasional roentgenogram. We are influenced in determining the intervals by the following additional factors: the position of the heart, the patient's comfort, the presence of subcutaneous emphysema and the temperature range. In regard to the last-mentioned we inflate as soon as we see the curve rising again; with regard to comfort, as soon as cough and expectoration increase. Expectoration is frequently increased after the initial inflations with a diminution in cough. This applies particularly to cases in which there are large vomicae. In these cases the patients expectorate larger amounts at one time and with greater ease. In the others cough and expectoration seem not to be influenced so much. In quite a few cases expectoration has fallen as low as from 15 to 25 gm. in twenty-four hours, and still the cough has continued to be severe for a long time. In the presence of subcutaneous emphysema we never reinflate, waiting for its complete subsidence.

In our cases the fluoroscope has been of particular value, especially in the detection of small effusions. The only sign of this usually obtainable in our series has been succussion; flatness, absence of voice and breath-sounds being obscured by the pneumothorax. Occasionally succussion has not been obtained. Frequently then in fluoroscoping our patients we have been surprised to find fluid, that is, a dense homogeneous shadow at the base presenting a horizontal upper surface that tilts to one side or the other as the patient bends his trunk and breaks into ripples when he shakes himself. In nine cases of effusion—so far we have had fifteen cases, in which we had obtained a complete pneumothorax in twelve—we withdrew a few centimeters of the fluid and inoculated guinea-pigs. In six of these cases the pigs developed tuberculosis, and on necropsy tubercles were found in the organs; but in only one of them did we recover tubercle bacilli. Smears made from the fluid at the same time that it was withdrawn have all proved negative.

Some of our cases of effusion have now persisted nine months. In six of these the appearance of the effusion has been preceded or immediately followed by a rise in temperature, even to 103 and in one case to 104. For some time past we have suspected fluid in our gas patients, when suddenly they would develop fever after having had a long apyretic course. The high temperature usually persists for a couple of weeks, slowly coming down to normal. The effusions develop after the pneumothorax has existed for at least two or three months.

In eight cases there has been an increase in the signs in the untreated lung. Five of them showed a small amount of tuberculosis in the other lung when treatment was begun; the rest developed entirely new processes. Treatment was discontinued in all but two of these cases; one patient developed a pleuritic rub at the other base, and the other begged us to recommence procedures, as he felt better while it was being given, though we never succeeded in obtaining more than a partial pneumothorax. It is gratifying to state that this patient has gained weight and improved very much in health and strength since we resumed treatment: of the others one died and two are *in extremis*, while the rest are doing better since we stopped inflating their chests.

Persistent tachycardia compelled discontinuation in another case. The pulse-rate was as high as from 140 to 160 beats per minute. This had existed before treatment. Roentgen-ray and chest findings seemed to show a torsion of the heart and large blood-vessels. This was a case of a complete pneumothorax with the right cardiac border in the right nipple line. The patient, a woman, died a short time ago.

Seven hemorrhagic cases have been treated in our series. In four there have been no recurrences during a period now varying from six months to one year. In another we were partially successful as the patient has only occasionally spit blood since then; but since establishing a partial pneumothorax it has been found impossible to proceed with treatment on account of the formation of adhesions as made out by skiagraphy. In another we failed to find the pleural cavity. Another case has been treated too recently to know what the results will be.

In two cases in which even the smallest hemoptyses had never been known to occur, there were small hemorrhages of from 3 to 6 ounces for the first time after the third and fourth inflations. These never recurred, inflations having been continued ever since, a period now of several months.

Subcutaneous emphysema has occurred once in each of twenty-seven cases, but more than once in only eight cases. The greatest number of occurrences of this was four, and this in but one case—an incomplete pneumothorax. This cutaneous emphysema usually occurs in the first inflations, very seldom in their later attempts. Severe coughing after inflation appears to be the most important and frequent cause, though occasionally it appears when there has been barely any cough and when it has been least expected. Another cause is manipulation of the needle while in the chest, causing trauma of the pleura and overlying tissues. Some of these emphysemas are quite marked, reaching upward into the neck, on many occasions going into the abdominal wall, and in three cases going even into the scrotum and thighs of the corresponding sides. These patients are very uncomfortable, but seldom for more than twenty-four hours. At present we strap all chests after inflation to avoid this complication, but occasionally it occurs despite this precaution.

In a few cases there has been considerable dyspnea, even after small amounts of nitrogen. This, however, has happened only in cases with bilateral lesions. Because of this, treatment has been discontinued.

As a local anesthetic novocain (1 per cent.) and epinephrin (1 : 6,000) are employed and always rather liberally administered. At least 30 minims are used for each puncture of the needle. After anesthetizing the skin over the site selected the novocain is slowly injected, the needle being pushed in right up to its hilt. Then a small incision is made with a well-guarded cataract knife through the derma, to allow the easy entrance of our Floyd needle.

A pneumothorax occurred in the opposite pleural cavity in one patient. This was a desperate unilateral case with marked consolidation of the right lung. After many attempts we succeeded in establishing a partial pneumothorax, and with this there was a marked improvement in the patient's condition. Her temperature dropped 2.5 degrees in three days and remained under 100 (by rectum) for three months, except for very few short rises in the curve. With this there was a gain of 8 pounds in weight. At the end of the time mentioned a roentgenogram revealed a small pneumothorax at the other base confluent with the one present on the diseased side. Fluoroscopy and physical diagnosis confirmed this. The area at the opposite base increased, lifting the heart up. Temperature rose again, and a lesion developed in the left lung and spread rapidly. The patient died a few months later. This was a desperate case to begin with, and we achieved temporary success.

Pleural shock has occurred once in over 400 inflations. This happened shortly after the needle had been inserted and before the gas had been allowed to flow. Under immediate stimulation the patient recovered. Since then this patient has done badly and is now *in extremis.*

Hemorrhages from the ear occurred in one case. They were quite severe and first occurred after the induction of a partial pneumothorax. They occurred on the same side as the pneumothorax. The patient had an old perforation. Our laryngologist reported it as a tuberculous process developing in an old case of chronic otitis media purulenta with ulceration resulting. The patient became alarmed at these hemorrhages and refused further treatment.

Tuberculous meningitis occurred in a case in which only a few inflations had been given. He had a few prodromal symptoms when treatment was begun, but they were not marked enough to deter us. He died in a few days.

One sudden death took place. This was several days after the first and only inflation. Subsequent inflation had been postponed because of the presence of subcutaneous emphysema. Necropsy revealed a solitary tubercle the size of a large pea in the right lateral ventricle, and another as large as an olive in the right cerebellum. The only symptoms referable to this prior to death had been severe headache and slight vertigo.

Nine deaths occurred. Four have previously been referred to: a case of tuberculous meningitis, a case of solitary brain tubercles, a case of torsion of heart and large blood-vessels, and a case of leakage through the mediastinum. Of the rest two patients had a complete pneumothorax, but continued to do badly after a temporary improvement in condition, one patient dying as a result of tuberculous laryngitis and tuberculous enteritis, the other as a result of a cardiac dilatation. One died in New York several months after treatment had been instituted here, but she is classed among our six failures. The other two were incomplete cases, very desperate when treatment was begun, in which the patients died despite our endeavors with nitrogen; yet even in them we achieved a brief amelioration of symptoms.

In one death we secured a necropsy. It was a bilateral case in which we had obtained a complete pneumothorax on the worse side—the left. This lung was compressed against the spinal column and posterior mediastinum, leaving the entire left pleura a free cavity barring a few adhesions at the apex, and a firm coarse band running from the pleura to the fourth intercostal space. In this pleura was a small amount of fluid, about 3 ounces, never known to exist ante mortem (this case has not been counted among our cases of effusion). The left parietal pleura was smooth and thickened. The left lung was about a third of its normal size, solid, compressed and carnified. The pleura over it was in some places thickened and had the appearance of icing on a cake. On section there were large conglomerate tubercles, separated by compressed and thickened pulmonary tissue. At the apex there were more evidences of activity and also several small vomicae full of cheesy material. These vomicae were compressed.

Microscopically there was marked fibrous change in this lung in the interstitial tissue, and only the faintest evidence of pulmonary alveoli. The whole picture gave an impression of scar formation and granulation tissue. The right lung was extensively infiltrated, and its only normal portion was the lower lobe, which appeared somewhat congested.

The heart was enlarged, the left ventricle hypertrophied, the right ventricle markedly dilated and its walls much thickened. The heart was pushed considerably to the right, most of its bulk appearing to the right of the spinal column, but still the descending aorta and esophagus were normal in position.

In addition there was extensive tuberculous ulceration in the ileocecal region, recent in origin, cholelithiasis, and parenchymatous degeneration of all the viscera. Death was due to circulatory failure on account of dilatation of the right ventricle.

I wish to thank both the attending medical staff and the resident physicians of our institution for many kindnesses shown in the drawing up of this summary.

Lack of Morbidity Statistics.—Morbidity reports, particularly of the communicable diseases, show the location of cases which constitute foci from which disease may be spread to the well. The collection of morbidity reports thus makes it possible to know where to take the proper precautions for the protection of persons who may be exposed to a given disease, and therefore acts as a prophylactic measure for the community at large.—W. C. Rucker, M.D., in *Pub. Health Rep.*

THE INTRASPINAL INJECTION OF SALVARSANIZED SERUM IN PARESIS

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This is a preliminary report of the treatment of general paralysis of the insane with salvarsanized serum.

The method used is that described by Swift and Ellis[1] and first used by them in cases of tabes. It is an attempt to influence the disease by introducing serum from a salvarsanized patient into the cerebrospinal fluid. The ordinary dose of salvarsan is injected intravenously, and one hour later a quantity of blood withdrawn (about 40 c.c.) sufficient to produce 12 c.c. of serum. The serum is heated for half an hour at 56 C. (132.8 F.) and diluted to 30 c.c. with normal salt solution. This mixture is then injected by gravity into the spinal canal after the withdrawal of an equal amount of fluid. The patients are then kept in bed for at least twenty-four hours.

It is not proposed to discuss the rationale of the method, but only to give a brief outline. The work of Camp[2] shows that salvarsan injected intravenously does not result in the presence of arsenic in the cerebrospinal fluid. The chorioid plexus in the ventricles has a selective activity, not allowing a filtration into the ventricles of all substances in the blood-serum. *Hence it is necessary* to use local therapy in reaching the spirochetes in the cortex. Salvarsan injected into the spinal canal causes too much irritation, but salvarsanized serum is well tolerated. It has been shown (Swift and Ellis) that the salvarsanized serum is destructive to spirochetes. Evidence of this has been obtained by cultural methods and from clinical data in the treatment of a syphilitic infant with serum from a salvarsanized patient. The maximum effect of the serum is reached one hour after the salvarsan injection, and is increased by heating at 56 C.

The cases dealt with in this paper are the first of a series being treated, and enough time has now elapsed to warrant a preliminary report. An attempt has been made to select early cases, but unfortunately they are usually of considerable duration before commitment to a state hospital. The earliest case of the series was of five months' and the most advanced of three years' duration. They were all in the second stage of the disease, none having reached the paralytic stage. It is worthy of note that none of these cases had a remission before treatment.

The injections were given at intervals of two weeks until each patient had received three treatments. In Case 2 four injections were given. A cerebrospinal fluid examination was made and Wassermann reactions determined before the beginning of treatment, and at the time of injection blood and fluid were taken for subsequent examination. For example, at the time of the second injection the Wassermann report would be on the serum collected one hour after the second dose of salvarsan, and the Wassermann report on the fluid would be two weeks after the first intraspinal injection of serum and about five hours after the second dose of salvarsan.

In all cases salvarsan was employed in preference to neosalvarsan. The powder, 0.6 gm., was dissolved in 30 c.c. of water neutralized with 25 drops of 15 per cent. sodium hydroxid solution and enough warm, freshly distilled water added to make 250 c.c. The solution was then filtered through a sterile filter-paper and given intravenously.

Out of the twenty-two injections very few severe reactions have followed the administration of the salvarsan. In some of the cases there was a slight chill and the temperature rose to 99 F. One patient, T. A. (Case 5), with *his first treatment had a most severe reaction.* Within an hour his teeth chattered and his face and arms became covered with large red blotches. In this case sterile tap-water of about a week's standing was used in place of the freshly distilled water. In the two following administrations water distilled the day of injection was employed, and there was little or no reaction.

If two or more injections were given in the same vein it was sometimes found very difficult, or even impossible, to give a third treatment in the same vessel. The vein became hard and cord-like and its caliber became much smaller. After a few weeks, however, the veins softened somewhat and no permanent obliteration of the vessels has been found.

There has been no reaction following the spinal injections. In two cases the temperature was taken every two hours for the first twenty-four hours, but showed only a slight drop in the temperature. At no time has there been any evidences of meningeal irritation. Subjective symptoms could not be recorded very well because of the patients' mental state. As a rule, it was difficult to keep them in bed the full twenty-four hours following the injection.

Case 1.—B. G., man, aged 37, printer, married, admitted Aug. 20, 1913, had a negative family history. Drinking habits were moderate; he was very seldom intoxicated. Syphilis was denied, but gonorrhea was admitted. Duration of mental trouble was eight months. The first symptoms noticed were ideas of grandeur. He trembled a great deal and had hesitancy of speech.

He was admitted to the Napa State Hospital, March 26, 1913. The examination at that time showed speech defect, facial tremor, lively knee-jerks and slight ataxia. The pupillary reactions were sluggish. The mental confusion disappeared and he was quite clear at the time of his transfer to the Agnew State Hospital, August 20.

September 24, neurologic findings were as follows: No facial paralysis. Fine tremor of the lips and defective articulation. Fine tremor of the hands, but not ataxic. Slight swaying in Romberg's position. Pupils equal; react in narrow limits to strong artificial light and promptly in accommodation. Knee-jerks and ankle-jerks slightly exaggerated. No Oppenheim or Gordon. A Babinski on the left: none on the right. *Pseudo ankle-clonus on each side. Wassermann blood* examination + + +, Wassermann fluid + + +, Noguchi butyric acid test +, cell-count 46 per cubic millimeter.

The patient's mental condition at this time could be summarized as follows: A feeling of well-being and a lack of concern about his present trouble. Consciousness clear. Delusions or hallucinations not elicited. He lacks initiative in conversation, but gives brief replies to questions. Memory is not clouded and he acquires new information readily.

Oct. 1, 1913, he was given salvarsanized serum; this was repeated again in two weeks. Wassermann serum examination at this time + + +, 27 cells per cubic millimeter, positive Noguchi and fluid Wassermann + + +. Two weeks later the third injection of salvarsanized serum. The cerebrospinal fluid shows positive Noguchi and + + + Wassermann. Cell-count was not made.

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[1] Swift and Ellis: New York Med. Jour., July 13, 1912.
[2] Camp, C. D.: Jour. Nerv. and Ment. Dis., 1912, xxxix, No. 12.

Following this treatment the patient was a little stronger physically and was better able to care for himself. He is still slightly euphoric and rather childish in manner. The mental examination is the same as above noted. His memory is especially good. The neurologic examination shows but little change. The facial tremor is still present; there is ataxia of the hands and some swaying in Romberg's position. The pupils react to light and accommodation. Both knee-jerks are exaggerated; the left greater than the right. Babinski on the left, none on the right.

One month after the last treatment there is still no change in his mental condition. He is very childish and at times euphoric and again slightly depressed and emotional. The neurologic examination shows no improvement in his physical condition. Dec. 1, 1913: Serum Wassermann + + +, fluid Wassermann + + +, cell-count 13 per cubic millimeter, Noguchi positive.

Summary.—The patient's condition has not improved much since the treatment either mentally or physically. The speech disturbance and facial tremor are not so pronounced. There has been a reduction of the cell-count from 46 to 13. The Noguchi butyric acid test and Wassermann of the blood and fluid all remain positive.

Case 2.—F. N., man, aged 37, saloon-keeper, admitted to the Agnew State Hospital May 1, 1913, had been affected by his trouble about one year. First symptoms were convulsion, restlessness, destructiveness and excitement. Previous to commitment he had five injections of salvarsan, and also potassium iodid and mercury. At the time of admission he seemed to be in an advanced stage of organic dementia. He was euphoric, speech was hesitating, and orientation and judgment were much disturbed. He continued in this condition, and required hospital treatment. Much of the time he was in bed because of untidy habits.

Sept. 5, 1913, cerebrospinal examination: cell-count 61 per cubic millimeter, Noguchi butyric acid test positive.

September 23: fluid Wassermann + + +, serum Wassermann + + +.

September 24, neurologic examination: no facial palsy; tremor of the lips and tongue pronounced; speech difficult; no ataxia of the hands, but an unsteady gait; pupils unequal, reacting in accommodation and to light very slightly. Fundus examination negative. Biceps-jerks equal, triceps absent. Knee-jerks and Achilles tendon-jerks absent. No plantar reflexes. Hearing defective; loudly spoken words heard in the right ear, but not in the left.

The patient's mental condition was characterized by mild euphoria. Memory for recent events was very poor and confused when anything complicated was attempted. October 7, 0.6 gm. of salvarsan was given intravenously, followed later by intraspinous injection of salvarsanized serum. This was repeated in two weeks. At this time the serum gave negative Wassermann, fluid Wassermann + + +, cells 77 per cubic millimeter, Noguchi positive.

Two weeks later treatment was repeated. At this time the blood-serum gave a slow negative Wassermann, fluid Wassermann + + +, cells 12 per cubic millimeter, Noguchi positive.

Six days following this injection it was noted that the patient was better able to care for himself. He was not so untidy. He was oriented in place, but not in time. Memory had improved so that he remembered many daily events. Neurologic condition had improved. He was more steady on his feet and there was less speech disturbance; otherwise it was the same as before treatment. November 19, the fourth injection of salvarsan, followed by salvarsanized serum, was given. Serum at this time gave negative Wassermann, fluid Wassermann + + +, cells 14 per cubic millimeter, Noguchi positive.

The patient's mental condition steadily improved. Two months after the treatment began he was able to do some ward work and took a very active interest in everything in his' surroundings. Memory was much better. He could remember the nurses' names and give a recital of events occurring several days before. The neurologic findings were much the same. Knee-jerks were still absent. Pupils were unequal and sluggish to light. There was some swaying in Romberg's position and ataxia of the hands.

December 22: serum Wassermann —, fluid Wassermann + + +, cell-count 3 per cubic millimeter, Noguchi positive.

Summary.—In this case there has been a marked improvement in the mental condition, but no change of importance physically except a reduction of the cell-count from 61 to 3, and less facial tremor and speech disturbance. The Wassermann fluid remained positive.

Case 3.—N. N., man, aged 32, millman, admitted to the Agnew State Hospital May 26, 1913, with mental trouble of three weeks' duration, had been restless, violent, destructive and had had extravagant delusions. The physical examination at this time showed nothing noteworthy except sluggish pupillary reactions, speech defect and slightly exaggerated knee-jerks. The mental symptoms were loss of memory, elation and delusions of wealth.

September, 1913, cerebrospinal examination: fluid clear, cell-count 35 per cubic millimeter, Noguchi butyric acid test positive. October 20: serum Wassermann + + +, fluid Wassermann + + +.

Five months after admission the patient began to show a physical failure and mental decline. Speech disturbance increased so that his remarks were quite unintelligible. Ataxia became pronounced. There was some incontinence of urine.

November 5, 0.6 gm. of salvarsan given intravenously, followed later by intraspinous injection of 40 per cent. salvarsanized serum. November 11, neurologic examination: No facial palsy; eye movements normal; a pronounced tremor of the muscles about the mouth and eyes; tongue tremulous; slight ataxia of the arms. He swayed in Romberg's position. Marked speech disturbance. Reflexes: Left pupil larger than the right; both reacted in accommodation; left reacted to light in narrow limits and the right reacted very sluggishly. All the tendon reflexes present. No Oppenheim, Gordon or Babinski. Incontinence of urine.

The patient was very silly in manner. He laughed whenever spoken to and had difficulty in understanding simple remarks. Orientation was correct. There were no delusions or hallucinations. Memory for recent events was much impaired. November 19, the second injection of salvarsanized serum was given. At this time serum Wassermann was + + +, fluid Wassermann + + +, cell-count 24 per cubic millimeter, Noguchi positive. A few days after this injection it was noticed the patient was not so irritable as he had been at one time, but his mind was more clouded and directions had to be repeated several times. He had had no incontinence of urine for the past three days.

December 3, third injection of salvarsan was administered. On this date serum Wassermann was + + +, fluid Wassermann + + +, cells 5 per cubic millimeter, Noguchi positive.

Three days following the last injection the patient had some incontinence of urine, but had been untidy on only one occasion since then.

Jan. 5, 1914, the patient was somewhat brighter than he was a number of weeks before. He showed a greater interest in his surroundings and made an attempt to do some work. He understood quickly what was said to him, but had difficulty in formulating his replies. Memory was not much improved. He was slightly euphoric and did not appreciate the seriousness of his condition.

The physical findings were unchanged. There was a pronounced speech disturbance, facial tremor, coarse tremor of the hands and unsteady gait. Since the last examination the right knee-jerk has been lost, but the left was still present. Pupillary reactions were sluggish. Serum Wassermann was + + +, fluid Wassermann + + +, cell-count 4 per cubic millimeter, Noguchi positive.

Summary.—No mental improvement was observed after treatment. Cell-count was reduced from 35 to 4. There was recovery from incontinence.

Case 4.—L. S., man, aged 45, carpenter, admitted to the Agnew State Hospital, April 12, 1913, with negative family history, had had delusions of wealth and a boisterous manner for about one month. At the time of his admission the neurologic examination showed nothing noteworthy except sluggish pupillary reflexes. The mental condition was characterized by elation, restlessness, flight of ideas and delusions of grandeur.

September 6, cerebrospinal fluid examination showed 72 cells per cubic millimeter, and positive Noguchi butyric acid test.

November 5, serum Wassermann was negative, fluid Wassermann + + +.

The patient's condition continued much the same and the neurologic examination remained negative.

November 13, he was given 0.6 gm. salvarsan intravenously followed by 30 c.c. of 40 per cent. salvarsanized serum intraspinally. This treatment was repeated in two weeks. At this time the serum Wassermann was +, fluid Wassermann + + +, cell-count 56 per cubic millimeter, Noguchi positive. Two weeks later the third injection was given, at which time a serologic examination was not made.

Jan. 12, 1914, neurologic examination failed to reveal any change. The pupillary reflexes were sluggish, the knee-jerks slightly exaggerated, but there was no ataxia, speech disturbance or tremors. The mental condition had not improved. The patient was very destructive, mischievous, distractible in thought and decidedly euphoric. Cerebrospinal fluid examination: Cell-count 8 per cubic millimeter, Noguchi positive, serum Wassermann +, fluid Wassermann +++.

Summary.—This case has shown practically no change in the mental or physical condition. There has been a reduction of the cell-count from 72 to 8. Two months after the treatment began the Wassermann reactions remained positive.

CASE 5.—T. A., man, aged 42, laborer, admitted to the Agnew State Hospital, Oct. 18, 1913, had a negative preliminary history except that he had had a slight head injury thirteen years before. The mental trouble was of three months' duration. It began with a facial tremor followed by fainting-spells; later there was severe headache with dizziness and vomiting. Finally an attack of extreme confusion, during which he did not recognize his family, led to the patient's commitment. The preliminary examination showed unequal and sluggish pupils; slow stuttering speech and exaggerated tendon reflexes. Cerebrospinal fluid examination revealed cell-count 11 per cubic millimeter, Noguchi positive, serum Wassermann +++, fluid Wassermann +++.

November 19, 0.6 gm. of salvarsan was injected intravenously followed by 30 c.c. of 40 per cent. salvarsanized serum intraspinally.

Six days following this injection there was no marked change in the patient's condition, but he was not so restless and the mental confusion was not so apparent. He was easily excited and could not carry out complicated directions. Neurologic examination was the same as before.

December 3, the second treatment was given. Blood Wassermann was +++, fluid Wassermann +++; the fluid was a light yellow. A cell-count could not be made because of the large number of red cells.

Two weeks later the third injection was given. Fluid Wassermann was +++, cell-count 7 per cubic millimeter, Noguchi positive.

Jan. 12, 1914, two months following the beginning of the treatment, little change in the patient's mental condition could be observed. He was not so restless, but was still easily confused. Memory could not be tested in detail. Neurologically there was no change since the last examination. Serum Wassermann was +++, fluid Wassermann +++, cell-count 10 per cubic millimeter, Noguchi positive.

Summary.—The slight improvement seen in this case is not more than might occur with the ordinary hospital treatment. The Wassermann reactions have not changed and the cell-count has shown no reduction.

CASE 6.—E. W., man, aged 37, was admitted to the Agnew State Hospital, Sept. 30, 1913. Family history was negative and early life uneventful. He had been a moderate user of alcohol. Mental trouble began three years before. The first symptoms were violent conduct and at times suicidal tendencies; there were also delusions of persecution. He was a patient in the Napa State Hospital for one month, during which time he developed paralysis of the right arm and aphonia. He was taken home, and this gradually disappeared.

Physical examination at the time of admission: Fairly well-nourished man. Chest and heart negative. Neurologic examination: Eye movements normal; face symmetrical; tremor of the left side of the mouth and deviation of the tongue to the left; no tremor of the hands, and no ataxia. Reflexes: Pupils equal; left reacted slightly to light; the right inactive; both reacted in accommodation. Biceps-jerks present and equal. Abdominal reflexes present. The left knee-jerk absent, the right very much diminished. No Oppenheim, Gordon or Babinski, and no Romberg. Mental condition characterized by a dull, listless, emotional state. Consciousness clear. Patient disoriented in place and for people, but oriented in time. Handwriting unsteady. No hallucinations or delusions. Memory for recent events much impaired. Thought elaboration much disturbed.

October 6, the patient had a seizure during which he became unconscious; there were tremulous movements of the muscles of the body. Following this he was much confused for a day. Further inquiry revealed the fact that convulsions had occurred at frequent intervals during the past two years.

November 22, the first injection of salvarsanized serum was given. This was repeated in two weeks. At this time cerebrospinal fluid examination showed 15 cells per cubic millimeter, Noguchi positive, fluid Wassermann +++, serum Wassermann +++.

December 19, the third injection, Wassermann examination of blood was not made. Fluid Wassermann was +++, cell-count 28 per cubic millimeter, Noguchi positive.

Jan. 19, 1913, the patient's mental condition had changed very little. He was apathetic and indifferent and frequently laughed in a silly manner. Memory was much impaired and he was disoriented both in time and in place. There was a tendency to romance. Neurologic examination showed that facial movements were normal; tongue protruded slightly to the left. There was no tremor or ataxia, and no speech disturbance. Reflexes: The pupils were very sluggish to light, but reacted in accommodation. Abdominal reflexes were present. Both knee-jerks were active, the right greater than the left. There was no Gordon, Oppenheim or Babinski. The patient had not been untidy for five weeks. Preceding this time he would be untidy about three days out of every three weeks.

Cerebrospinal fluid examination revealed a cell-count of 17 per cubic millimeter, serum Wassermann +++, fluid Wassermann +++. Noguchi positive.

Summary.—The only change in the neurologic findings of this case is the altered knee-jerks. At the preliminary examination the left knee-jerk was absent, the right diminished, and now they are both very active. The cell-count has been reduced from 118 to 14. No change has occurred in the Wassermann reactions. There is no mental improvement.

CASE 7.—I. D., aged 36, business man, was admitted to the Agnew State Hospital, Sept. 13, 1913. Family history showed insanity on the maternal side, the mother and uncle having been insane. The patient had syphilis eight years before, for which he had received quite efficient treatment. He had been married four years. The wife denied miscarriages. It was noticed that her pupils were unequal. Four years before the patient had had a discharging ulcer on the scrotum, which yielded to one injection of salvarsan. A scaly rash on the body also disappeared at this time.

In November, 1911, he suddenly developed diplopia. At this time he was given an injection of salvarsan and the eye trouble quickly disappeared. In May, 1912, it returned again for a few weeks. There was a positive Wassermann in May, 1911.

The present mental trouble began one year before admittance. The patient suddenly became confused, talked in a rambling manner and after a few hours became very drowsy. This somnolent state lasted for some time. He could be aroused, but would immediately fall asleep again. There was considerable clouding of consciousness for a number of months.

Blood and spinal fluid gave negative Wassermann reactions, and the cell-count was negative sometime during the summer of 1912. At this time there were no neurologic findings; the pupils were equal and reacted to light and in accommodation. Patient's mind became clearer, but it left him irritable and excitable; memory was very poor for past events.

Improvement continued and in December, 1912, he was able to go to a health resort. In the summer of 1913 he was rather erratic and required a special nurse. Delusions of wealth developed and he had outbreaks of irritability, necessitating his commitment to the hospital.

Neurologic examination, Oct. 14, 1913, revealed facial movements symmetrical, eye movements normal, no nystagmus, and no tremor of the face or tongue. The tongue protruded in the median line. There was no tremor or ataxia of the hands, and no Romberg. Pupils reacted to direct and consensual light stimulation and in accommodation. Knee-jerks were present and equal. There was no Gordon, Oppenheim or Babinski. Blood Wassermann was negative, fluid Wassermann positive, cell-count 74 per cubic millimeter, Noguchi positive.

October 16, the patient was given 0.6 gm. of salvarsan intravenously followed by an intraspinal injection of salvarsanized serum. This was repeated in two weeks. At this time the cell-count was 15, Noguchi positive, serum Wassermann negative, fluid Wassermann negative.

November 12, the third injection of salvarsanized serum was given. Fluid Wassermann —, cell-count 22 per cubic millimeter, Noguchi positive. Two weeks following the last injection it was noticed that the patient's memory was improving and that he had a better appreciation of his condition. There were no delusions and he recognized the former ideas as absurd notions. Neurologic examination showed no change.

December 8, serum Wassermann was negative, fluid Wassermann negative, cell-count 18 per cubic millimeter, Noguchi opalescent.

Summary.—The patient's mental condition at the time of admission was characterized by ill-defined delusions of business activities, defective memory for recent events, and irritability. There has been a very noticeable improvement in memory and his conduct is under very good self-control. The fluid Wassermann became negative and the cell-count eight weeks after the first treatment shows a reduction from 74 to 18.

The accompanying table gives the cerebrospinal fluid examinations and the Wassermann reactions before treatment, the findings at the time of the third injection and again four weeks later.

The neurologic findings show no marked alteration following the treatment. In Case 6 the patient had one absent knee-jerk, and now it can be elicited very easily. This change may be due to more involvement of the lateral columns of the cord rather than an effect of the treatment. The facial tremor and speech disturbance is less noticeable in Cases 1 and 2. This has gone parallel with the improvement mentally. In Case 3 there was incontinence of urine which has entirely disappeared for five weeks. Involuntary urination and defecation were present in Cases 1 and 2, but they were the result of mental dulness rather than true incontinence. With the improved mental condition in these two cases this trouble has entirely ceased.

A review of the mental symptoms is not very encouraging. It must be borne in mind, however, that even though the disease is arrested, there would still remain some mental defect as a result of the destructive process in the brain. In Case 2, however, the mental change is worthy of note. After a duration of seventeen months this patient had impairment of memory, lack of apprehension and untidy habits. One month after the last injection it is noticed that memory for recent events is very accurate, emotions are active and stable, and there is an alertness of preception in marked contrast to the earlier dulness. This case has shown the greatest reduction in cell-count.

The blood Wassermann reaction was altered in two cases. In Case 2 it became negative at the time of the third injection and remained so when the patient was examined again four weeks later. In Case 4 a Wassermann + + + was changed to a Wassermann +. In the case of cerebrospinal syphilis, both the serum and fluid Wassermanns became negative. The fluid Wassermann remained stationary in all the cases of paresis. Kaplan[3] has discussed cases of tabes with "Wassermann-fast" reactions which go on to taboparesis. It may be that all cases of paresis are not "Wassermann-fast," and are amenable to treatment as shown by Case 2.

The Noguchi butyric acid test remains positive in all of the paralytics. Unfortunately, a record was not made of the intensity of the reactions. It was observed, however, that in the beginning the precipitate was heavy and flocculent, whereas in the later tests it was finely granular and came down slowly. In some of the cases the Noguchi reaction would be unusually heavy after the first intraspinal injection and then gradually diminish. In the case of cerebrospinal syphilis the fluid changed from a positive Noguchi to one giving an opalescent reaction.

The most striking result of the treatment is a reduction in the cell-count. The original counts were all very high, but there was a decided reduction following each injection of salvarsanized serum. In two cases the num-

SUMMARY OF FINDINGS IN PARESIS TREATED BY INTRASPINAL INJECTIONS OF SALVARSANIZED SERUM

Case	Diagnosis	Before Treatment				Four Weeks after First Injection				Four Weeks after Last Injection			
		Cerebrospinal Fluid			Blood	Cerebrospinal Fluid			Blood	Cerebrospinal Fluid			Blood
		Cells	Nog. B. A. Test	Wa. R.	Wa. R.	Cells	Nog. B. A. Test	Wa. R.	Wa. R.	Cells	Nog. B. A. Test	Wa. R.	Wa. R.
1	Paresis	46	+	+ + +	+ + +	?	+	+ + +	?	13	+	+ + +	+ + +
2	Paresis	61	+	+ + +	+ + +	12	+	+ + +	*	3	+	+ + +	—
3	Paresis	35	+	+ + +	+ + +	5	+	+ + +	+ + +	4	+	+ + +	+ + +
4	Paresis	72	+	+ + +	—	?	?	?	?	8	?	+ + +	+
5	Paresis	11	+	+ + +	+ + +	7	+	+ + +	?	10	+	+ + +	+ + +
6	Paresis	118	+	+ + +	+ + +	28	+	+ + +	?	14	+*	+ + +	+ + +
7	Cerebral syphilis	74	+	†	—	22	+	+ +	?	18	‡	—	—
8	Paresis control	68	+	+ + +	—	51	+	+ + +	?	50	+	..	..
9	Paresis control	98	+	+ + +	—	51	+	+ + +	?	61	+	..	..

* Slow. † Positive. ‡Cloudy.

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3. Kaplan, D. M.: The "Wassermann-Fast Tabes," THE JOURNAL A. M. A., Dec. 20, 1913, p. 2214.

ber of cells were reduced to normal. Case 6 was the only one which did not show any change, but the original count in this case was very low. It may be argued that reduction of the cell-count is due to the removal of 30 c.c. of fluid at two-week intervals, with a slow accumulation of cells. This is not borne out by a comparison with two cases as controls. In Case 9 in the table the patient was injected intraspinally with salt solution after the withdrawal of 30 c.c. of fluid at two-week intervals. There was only a slight reduction in the cell-count. Case 8 was treated the same way, except that plain serum was used instead of salt solution. This case also showed but a partial reduction four weeks after the last injection.

Definite conclusions cannot be drawn from such a small number of cases, but this paper is presented with the hope that it will add a little evidence to that of other workers in determining the proper method of treatment. The finding of spirochetes in the cortex of paralytics by Noguchi and Moore will help to place the therapy on a scientific basis. If the causative agent of the disease cannot be reached through the blood-stream, the other avenue of approach is through the cerebrospinal fluid and lymph-spaces. The treatment here described may not be the solution of the problem, but the work thus far shows that the method of Swift and Ellis deserves a thorough trial.

We wish to acknowledge our indebtedness to Dr. G. L. Boalt for the Wassermann examinations; also we wish to thank Dr. Leonard Stocking, medical superintendent, for permission to publish this report and for providing facilities for the work.

SUBACROMIAL BURSITIS *

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In the discussion of the lesions of the shoulder-joint, the various more or less intimately associated bursae received practically no consideration until after the appearance of the first paper on this subject by Codman in 1906. Codman states that inflammation of the subacromial bursa causes more shoulder-joint disability than all other shoulder-disorders combined, including fractures and tuberculosis, a statement which a limited personal experience and observation induce me to endorse. Codman says:

> Subacromial bursitis is usually diagnosed as "brachial neuritis, periarthritis, muscular rheumatism, circumflex paralysis, contusion of the shoulder, fibrous gout, rheumatism," etc

In the past few years a number of articles on this subject have appeared, all of them giving due credit to the work of Codman, and quoting more or less freely from his writings. Codman first called this lesion under consideration "subdeltoid bursitis," believing that there were usually two bursae, a subdeltoid and a subacromial, the former lying between the deltoid muscle and the tuberosity of the humerus, and the latter between the tendon of the supraspinatus muscle and the overhanging acromion.

In his later papers Codman considers a single bursa the more usual; if two be found they are to be regarded as a divided subacromial bursa. Prestiss of Iowa City insists that his dissecting-room experience leads him to conclude that this bursa is usually multilocular, an observation which further confirms the frequency of bursitis with resulting adhesions. This bursa is attached below to the fibrous expansion of the supraspinatus muscle and the greater tuberosity of the humerus, and above to the under surface of the deltoid muscle and to the overhanging acromion and coraco-acromial ligament. It is free at its periphery, that it may act out its gliding roller-bearing function when the arm is abducted or rotated.

It is readily understood that this bursa, in its exposed position, may be readily involved in trauma about the shoulder-joint, as in a fall or a blow. It is also readily seen that a laceration of the tendon of the supraspinatus muscle, near its attachment to the greater tuberosity, would unavoidably involve the base of the bursa. The constant repetition of the same motion, as in pitching a baseball during a lively game, the pitcher being without proper training, may cause inflammation of this bursa. Any injury of the arm, or any long-continued fixation of the arm may also result in adhesions between the roof and the floor of the bursa. Occasionally the bursa is inflamed in general sepsis; also in gonorrhea, pneumonia, rheumatism, or tuberculosis.

Whatever be the cause of the bursitis, the resulting clinical picture will be best understood by dividing the process into three stages: In the first stage, that of acute inflammation, the rubbing together of the opposed surfaces causes severe pain, and the muscles of the shoulder-joint are on the defense, as are the abdominal muscles in the early stage of peritonitis, or the chest-muscles in pleuritis, and the shoulder-joint is fixed by muscle spasm whenever motion beyond an arc of 10 degrees is attempted. This limited painless motion must not be forgotten, as it differentiates bursitis from a number of other lesions, such as arthritis.

Muscle spasm and pain are very marked when the arm is abducted beyond 10 degrees. It is possible to bring the arm in front of the chest and place the hand on the opposite shoulder without pain. In fact, this position affords a sense of comfort. To attempt to button the collar at the back of the neck, involving as it does extreme outward rotation, is exceedingly painful or impossible. To button the suspenders behind involves extreme internal rotation, and is exceedingly painful or impossible. A patient may be disabled for months. Internal and external rotation and abduction beyond 10 degrees involves rather extensive movement between the opposing inflamed floor and inflamed roof of the bursa. It is difficult or impossible to find a comfortable position in bed. To lie on the involved side or on the opposite side is equally painful; while in the supine position there is a very uncomfortable dragging at the shoulder. Dawbarn calls attention to a sign which he considers pathognomonic. Finger-pressure over the shoulder just external to the acromion is very painful while the arm is hanging at the side, because the inflamed bursa is compressed. If it be possible to raise the arm the bursa slips under the protecting acromion and this painful pressure-point disappears. Pressure at other points is free from pain. As in pleuritis, there may be an accumulation of fluid in the bursa, and it is very easily understood how in abduction this distended and tender bursa is caught between the tuberosity of the humerus and the overhanging acromion. Muscle spasm again fixes the joint.

When the sharp pain of a pleuritis is remembered, it is easy to understand how the rubbing together of the

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* Read before the Western Surgical Association, St. Louis, Dec. 19-20, 1913.

opposing inflamed surfaces of the bursa causes muscle spasm and fixation, as well as severe pain. As in pleuritis, there may be palpable friction. Nor is it difficult to understand how, as in pleurisy, the opposite inflamed surfaces of the bursa become adherent, and how, as the acute inflammatory process subsides, movement is less painful but limited by adhesions. In this second stage of adhesions the patient may make valiant attempts to abduct his arm to button his back collar-button, or to button his suspenders behind, but these movements are often entirely impossible, simply because adhesions do not permit the necessary movement between the floor and roof of the bursa. Nor is it difficult to understand how in the course of time these adhesions melt away, as in peritonitis, and how these same movements become possible, the pain and discomfort incident thereto slowly growing less and finally disappearing. Sometimes adhesions are entirely painless, but only in comparison to the excruciating pain of the acute stage. Codman says:

> It is during the stage of adhesions that the influence of the character of the individual on the course of the disease is most marked, because the man who can make use of his tender and atrophic muscles in spite of the soreness has a great advantage over the hypersensitive neurasthenic who has not the courage to stretch his adhesions.

If he will persist in stretching his adhesions good results are to be expected.

In the third stage of Codman, the adhesions have given way and the full range of motion has returned, but with pain and discomfort still attending certain movements, as when the arm is abducted and the still enlarged bursa refuses to slip under the acromion. Sometimes the bursa is so large that it locks the arm at this point, and many patients learn that by rotating the humerus outward the arm is raised without difficulty, as by outward rotation the concave surgical neck of the humerus is brought under the acromion. Sometimes these patients think that the weather has some effect on their pet shoulder, a fact which easily leads to the diagnosis of chronic rheumatism.

The diagnosis of subacromial bursitis is not difficult when the lesion is remembered. Characteristic of the first stage are the persistence of painless motion within an arc of about 10 degrees, the muscle spasm when movement is attempted beyond this arc, the severe pain on pressure over the deltoid muscle just external to the acromion and absence of pain on pressure of other points, and the painful muscle defense on internal and external rotation of the humerus, with the locking of the joint on abduction beyond 10 degrees.

In the second stage, when adhesions are present, the diagnosis is equally easy. The more or less painful and impeded motion due to adhesions, especially on abduction, and internal and external rotation of the humerus, with the painful point of Dawbarn are characteristic. Of course, in this stage the pain is very severe if the adhesions be stretched beyond a certain point. In the third stage the relative freedom of movement with pain when certain movements are attempted, the somewhat impeded rotation of the humerus, and the locking of the arm on abduction are quite characteristic.

Roentgenoscopy may sometimes disclose the inflamed and thickened bursa, but is especially valuable in a negative rather than in a positive way, by demonstrating a joint apparently perfectly normal in every particular.

The prognosis is usually good if the patient has sufficient perseverance, grit and determination to stretch the adhesions. A few months ago I saw a young man of about 30 who had but a very limited motion in his shoulder-joint. He could not do more than bring his hands to the side of his head, and he had been in that condition for several years, an example of what may happen when the patient does not persist in stretching up the adhesions.

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CONCLUSIONS

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3. In the first stage abduction and rotation are limited by muscle spasm.
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5. In the third stage, when adhesions have been sufficiently stretched or dissolved, movement may be relatively or entirely unimpeded.
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7. Treatment: In the first stage, rest; in the second stage, persistent but mild stretching of adhesions; in the third stage, continuation of movement, with possible excision of the bursa. At any stage, a bursa distended with fluid may be evacuated.

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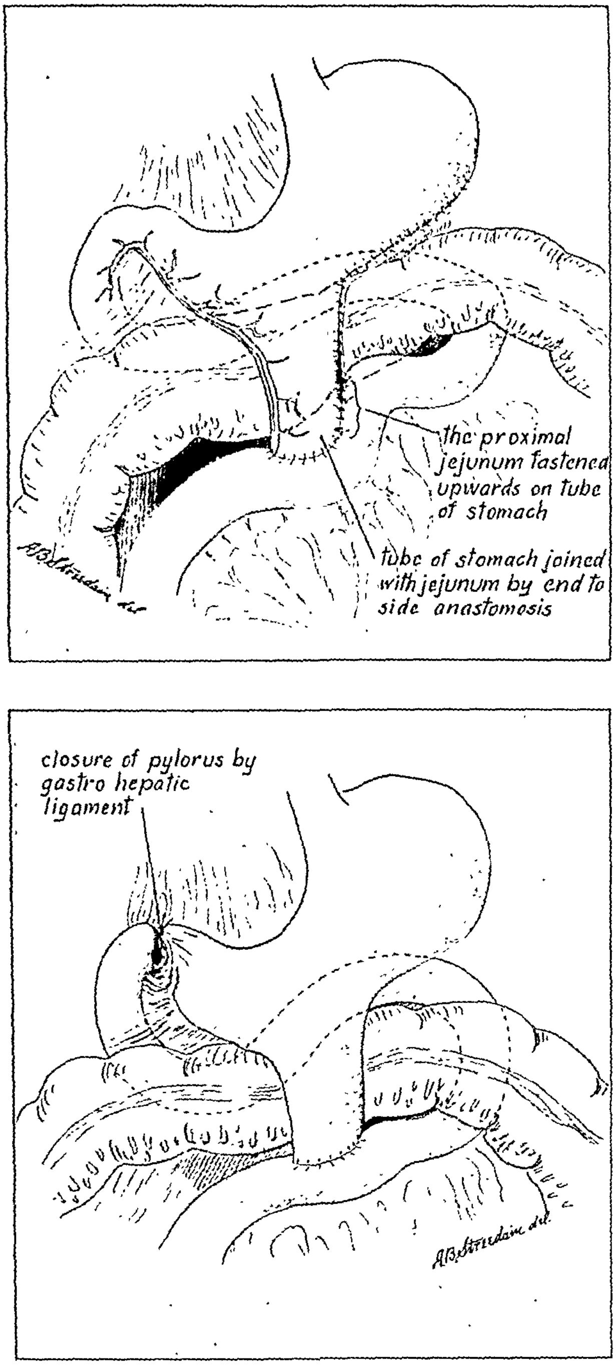
GASTRO-ENTEROSTOMY BY A PLASTIC FLAP

CARL BECK, M.D.
CHICAGO

In 1904 and 1905, when Alexis Carrel was associated with me in Chicago, we made some experiments, forming a union between the esophagus and the stomach for the purpose of studying an operative procedure for the cure of obstruction of the esophagus near the cardia by scar or carcinoma.


the proximal jejunum fastened upwards on tube of stomach
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Figures 1 and 2.—Technic of operation for gastro-enterostomy by a plastic flap.

We had the idea that the large curvature of the stomach offered good material for making a well-nourished flap of sufficient length to permit the formation of a tube with which to connect the stomach with the esophagus above. The upper part of the new esophagus was formed by cutting the esophagus across, as low as possible, and drawing it forward until it joined the tube formed from the flap.

We called it the "prethoracic esophagus," and demonstrated the result before the Chicago Medical Society.[1]

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The same method had been employed by me for some time for gastro-enterostomy. Instead of using the newly formed tube of the stomach wall for union with the esophagus, it is in this instance implanted into the small bowel. The technic is as follows:

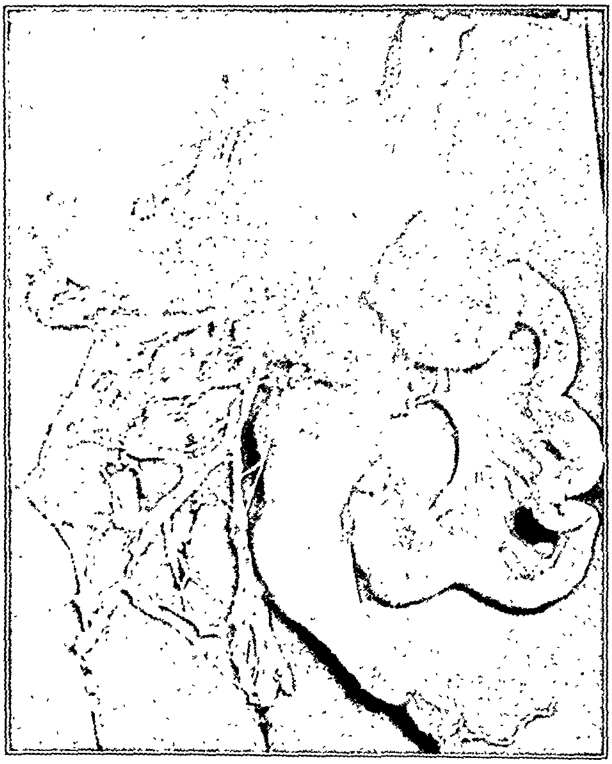

Fig. 3.—Illustration of specimen showing, above, the cardia and pylorus tied; in center, the new pylorus; below, the small bowel. To the right is shown the empty duodenal side, and to the left the full distal portion of the jejunum.

One Doyen clamp is placed across the pyloric antrum, and the other at a right angle from the large to the small curvature. A flap is cut, either in the anterior wall or along the large curvature, but nearer the pylorus than the cardia, and a continuous suture is made to transform the flap into a wide tube. This is implanted, end to side, into a part of the jejunum, below, not far from the Treitz ligament.

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opposing inflamed surfaces of the bursa causes muscle spasm and fixation, as well as severe pain. As in pleuritis, there may be palpable friction. Nor is it difficult to understand how, as in pleurisy, the opposite inflamed surfaces of the bursa become adherent, and how, as the acute inflammatory process subsides, movement is less painful but limited by adhesions. In this second stage of adhesions the patient may make valiant attempts to abduct his arm to button his back collar-button, or to button his suspenders behind, but these movements are often entirely impossible, simply because adhesions do not permit the necessary movement between the floor and roof of the bursa. Nor is it difficult to understand how in the course of time these adhesions melt away, as in peritonitis, and how these same movements become possible, the pain and discomfort incident thereto slowly growing less and finally disappearing. Sometimes adhesions are entirely painless, but only in comparison to the excruciating pain of the acute stage. Codman says:

> It is during the stage of adhesions that the influence of the character of the individual on the course of the disease is most marked, because the man who can make use of his tender and atrophic muscles in spite of the soreness has a great advantage over the hypersensitive neurasthenic who has not the courage to stretch his adhesions.

If he will persist in stretching his adhesions good results are to be expected.

In the third stage of Codman, the adhesions have given way and the full range of motion has returned, but with pain and discomfort still attending certain movements, as when the arm is abducted and the still enlarged bursa refuses to slip under the acromion. Sometimes the bursa is so large that it locks the arm at this point, and many patients learn that by rotating the humerus outward the arm is raised without difficulty, as by outward rotation the concave surgical neck of the humerus is brought under the acromion. Sometimes these patients think that the weather has some effect on their pet shoulder, a fact which easily leads to the diagnosis of chronic rheumatism.

The diagnosis of subacromial bursitis is not difficult when the lesion is remembered. Characteristic of the first stage are the persistence of painless motion within an arc of about 10 degrees, the muscle spasm when movement is attempted beyond this arc, the severe pain on pressure over the deltoid muscle just external to the acromion and absence of pain on pressure of other points, and the painful muscle defense on internal and external rotation of the humerus, with the locking of the joint on abduction beyond 10 degrees.

In the second stage, when adhesions are present, the diagnosis is equally easy. The more or less painful and impeded motion due to adhesions, especially on abduction, and internal and external rotation of the humerus, with the painful point of Dawbarn are characteristic. Of course, in this stage the pain is very severe if the adhesions be stretched beyond a certain point. In the third stage the relative freedom of movement with pain when certain movements are attempted, the somewhat impeded rotation of the humerus, and the locking of the arm on abduction are quite characteristic.

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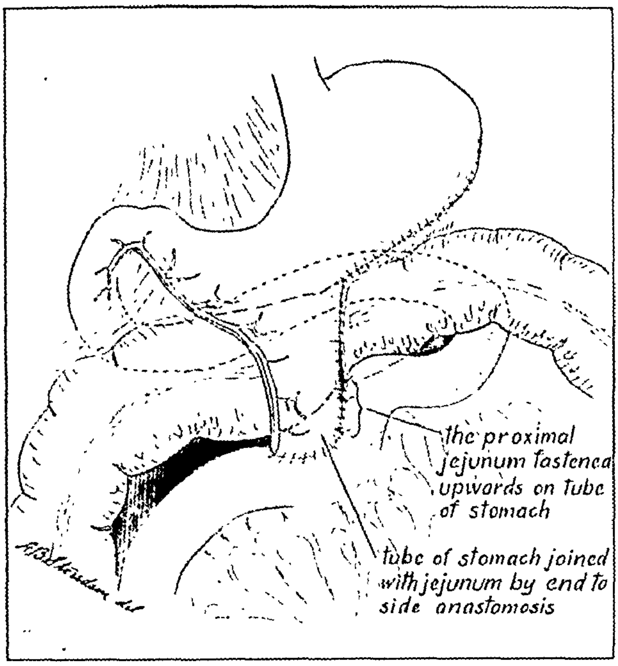
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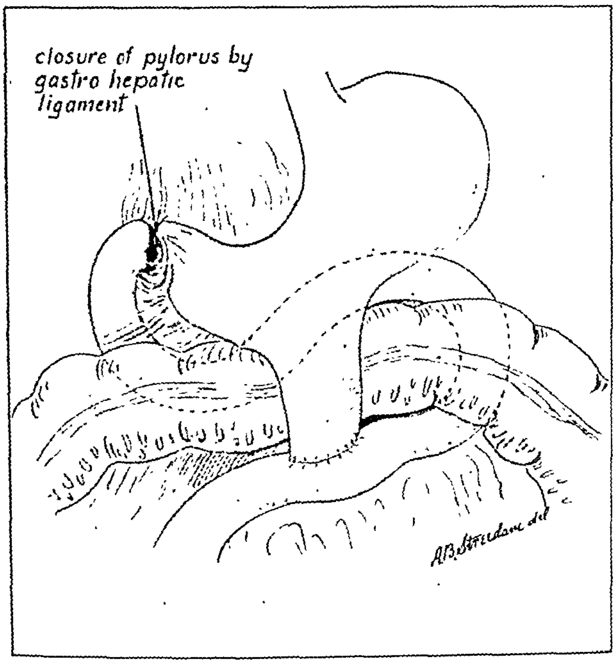

Figures 1 and 2.—Technic of operation for gastro-enterostomy by a plastic flap.

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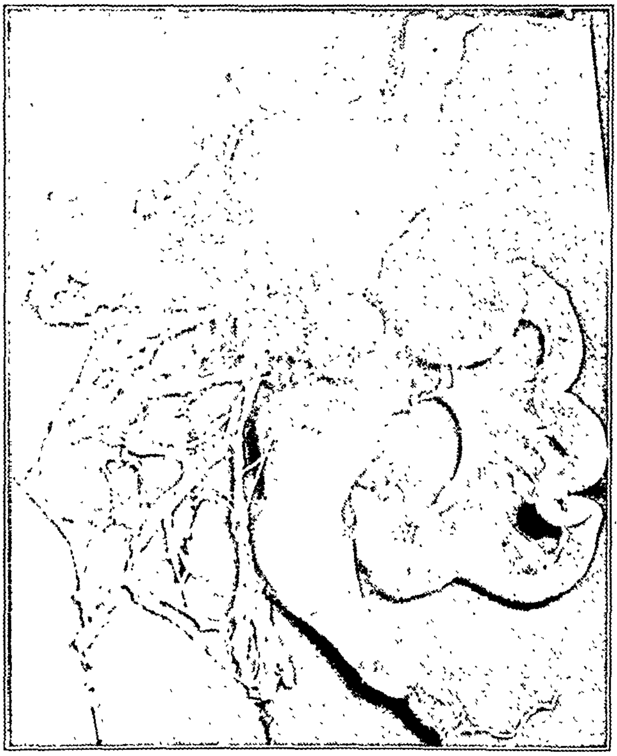

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In order to make the course of the flow of the stomach contents go through the distal portion of the jejunum, the proximal or duodenal arm must be sutured up along the side of the new tube. In this manner a reflux of the stomach contents around the corner (vicious circle) and backward is prevented.

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[1] Illinois Med. Jour., 1905, p. 473.

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The specimen (Fig. 3) distinctly shows the filled portion of the aboral and the empty oral portion of the jejunum.

This method is not much more difficult than an ordinary gastro-enterostomy, and requires but little additional time. How useful this method may be will be shown by a number of experiences on the human being, which will be reported later.

108 North State Street.

TECHNIC OF VAGINAL HYSTEROTOMY

ARTHUR E. HERTZLER, M.D.
KANSAS CITY, MO.

Some years ago[1] I described a method of abdominal hysterotomy in which a nearly bloodless field was secured by temporary compression of the ovarian and uterine arteries by means of Moynihan or similar clamps.

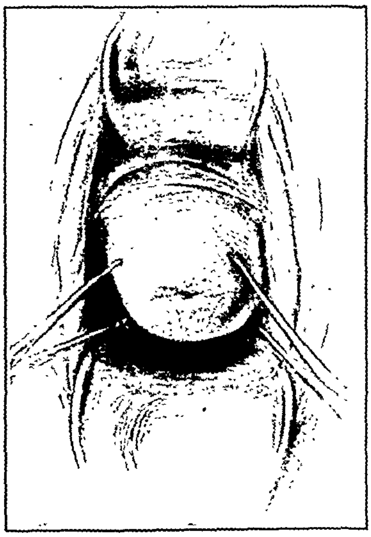

Fig. 1.—Transverse incision in anterior culdesac.

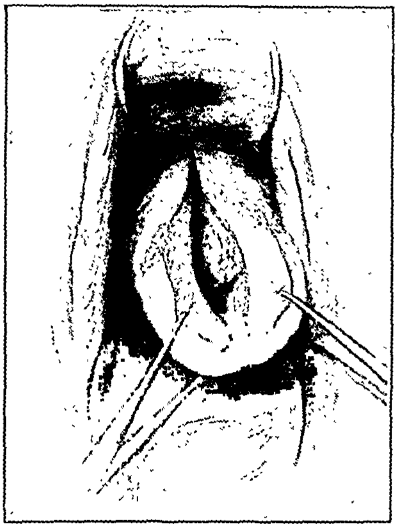

Fig. 2.—Cervix split to the internal os.

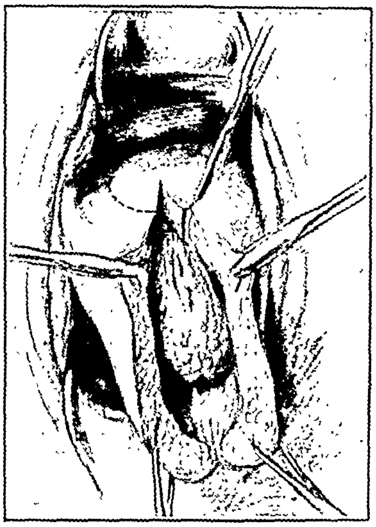

Fig. 3.—Circumscription by incision of base of tumor in case of submucous fibroid or polyp.

At that time I had already employed incisions as described in the present paper when vaginal operations were in progress. It was my belief that the principle was a new one; but subsequent reading has shown me the fallacy of this assumption. Dickinson[2] has recently summarized the literature of this subject.

The technic which I now employ is as follows:

The cervix is grasped on each side with tenaculum forceps and drawn down toward the vulva. A transverse incision is made in the anterior culdesac (Fig. 1). The bladder is then freely raised from the uterus.

The cervix is now split up to or slightly beyond the internal os (Fig. 2), and the fundus is brought out into the vulva.[3] It is well at this point to take a preliminary survey in order to determine the probable further requirements of the case. Often a lesion in the direct line of the incision is seen and the incision may then be extended to meet the conditions present. For instance, in case there is a submucous fibroid or a polyp the base of the tumor is circumscribed by the incision (Fig. 3).

When the lesion is diffuse, as in polypoid endometritis, a curet may be employed; but ordinarily when a lesion has been persistent enough to demand hysterotomy, complete excision of the affected area is better than curettage. This is particularly true if the patient is at or near the menopause.

When the lesion has been excised, the remaining portion of the uterus is united by sutures (Fig. 4). If possible, the knots should be placed inside the uterine cavity so that there may be as smooth a surface as possible when the fundus is replaced in the abdomen.

When the suture line has been placed as far as the internal os the fundus is returned (Fig. 5) to the abdominal cavity. The suture is then completed so as to unite the vaginal portion of the cervix and restore the incision in the culdesac (Fig. 6).

If so much of the fundus is removed (Fig. 4) that subsequent pregnancy would be unsafe, a portion of the tubes must be excised. If the portion of the fundus removed includes the insertion of the tubes, the free end of the broad ligament must be united to the remaining portion of the uterus in such a way that the tubes do not reach the cavity of the uterus, lest pregnancy take place.

The extent of uterus to be excised is determined by the extent of the lesion present. In idiopathic hemorrhage or diffuse polypoid endometritis at the menopause it may be desirable to excise the entire body of the uterus down to the internal os (Fig. 7). In this way a supravaginal amputation by vagina is done.

After the diseased portion is excised, if the broad ligament is involved in the excision, its free ends are brought together and attached to the stump of the uterus remaining (Fig. 8). This excludes the free surfaces from the peritoneal cavity, and when the excision is made at or near the internal os furnishes material support to the cervix.

This operation is particularly useful for tumors within the uterus. It permits excision of the point of attachment and the removal of the tumor without dragging it across the abdominal cavity. In cases in which malignancy is suspected it should be substituted for the curet. It allows a diagnosis under the eye of the operator and permits the required operation to be instituted at once. The curet should be banished as a diagnostic instrument because the lesion may easily escape the instrument. If the curet discloses malignant disease, radical treatment at once becomes necessary in order to prevent dissemination. The fibrin bands following the curettage act as gubernacula along which the malignant cells may migrate.

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[1] Hertzler, Arthur E.: Bloodless Hysterotomy and Preliminary Ligation as Aids to Conservative Myomectomy, THE JOURNAL A. M. A., March 13, 1909, p. 861.

[2] Dickinson: Am. Jour. Obst., 1913, lxviii, 680.

[3] This ordinarily requires that the cervix be pushed back in the posterior culdesac in order to facilitate the dislocation of the fundus. The position as illustrated in Figure 3 is possible when there is great relaxation of the broad ligaments.

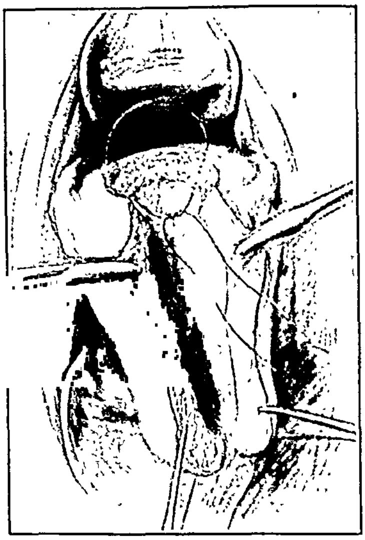
Fig. 4.—Remaining portion of uterus united by sutures.

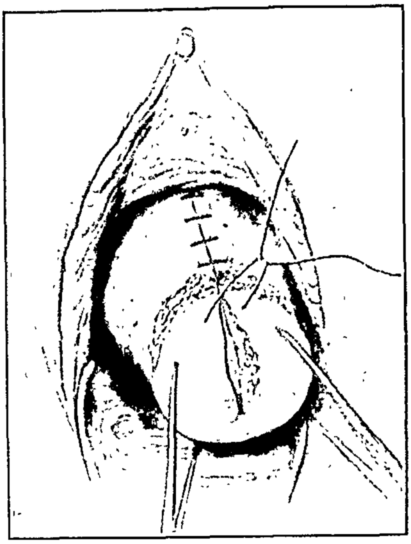
Fig. 5.—Fundus returned to abdominal cavity after completion of suture line to internal os.

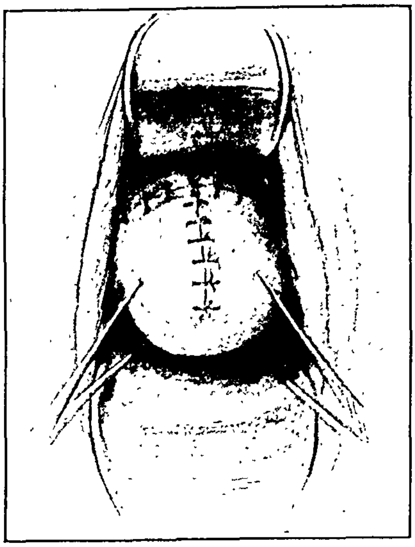
Fig. 6.—Completion of suture to unite vaginal portion of cervix and restore incision in the culdesac.

The operation is a perfectly safe one, and if coaptation is carefully made the uterine wall should be as firm as before. Two of my patients from whom fundal polypi were removed by this method have passed through normal pregnancies.

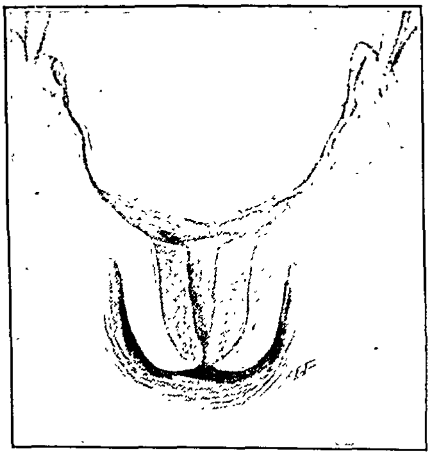
Fig. 7.—Excision of entire body of uterus down to the internal os.

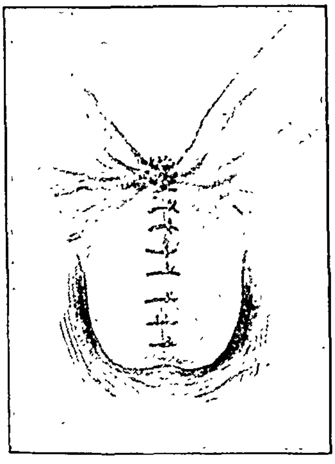
Fig. 8.—Free ends of broad ligament brought together and attached to stump of the uterus remaining.

In case cystocele, descensus or retroflexion coexist in a patient past the menopause, or in a woman whom for some reason it is necessary to sterilize, the Freund-Wertheim operation may be added with advantage.

1004 Rialto Building.

SIMPLIFICATION OF THE DUODENAL-TUBE EXAMINATION*

C. W. LIPPMAN, M.D.
SAN FRANCISCO

In applying the duodenal tube to the roentgenologic examination of the digestive tract we soon felt the need of a more rapid passage of the olive than is usual with the ordinary methods. Before the screen we observed that the propulsive force in the esophagus was the peristalsis, in the stomach the weight of the ball at the end of the tube, in the region of the pylorus a mechanism which is not yet perfectly clear, and in the duodenum again the weight of the ball. Since gravity was a significant factor, the position of the patient was of the utmost importance. By proper changes of the position we arrived at a technic which even with our wholly pathologic material led us to our goal in from twenty to twenty-five minutes. Of course, we except cases in which it is a manifest impossibility to effect a passage.

The steer-horn stomach offered especially simple conditions for bringing the force of gravity into play. This fitted in with our previous observation that practically all of our cases in which the ball had entered the duodenum quickly were steer-horn stomachs. The others in which it took hours for the capsule to get into the duodenum were long fish-hook stomachs. Of the different methods which we tried out that of Gross[1] gave us the best results. We therefore decided to follow his technic with several additions and modifications. We added the supine position, as we know that in the supine position every fish-hook stomach tends to take a transitional form. Later we raised the hips in the supine position in order to overcome the chief obstacle to the passage of the olive, that is, the pylorus, which ran from the left anteriorly to the right posteriorly. The vertebral column, which acts as a watershed, prevents the olive from falling back into the left part of the stomach with the patient in the supine position. We also added the bending forward of the patient so that the tube might not become coiled up in the fairly common pseudo-hour-glass stomachs. Later still we fed the tube in to 80 cm. after the first five minutes in the supine position, as our olive fell back several times with only 70 cm. of tube. Most of our work was done with an original Gross tube. We still insist on the use of the heavy "Gross" ball, but use a thinner tube.

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* From the Central Roentgen Institute, Vienna, Dozent Guido Holzknecht, director.

[1] Gross, M.: A Duodenal Tube, The Journal A. M. A., April 23, 1910, p. 1365; Kurze Erwägungen über die grob-physikalischen Eigenschaften des menschlichen Duodenal- (Jejunal-)Saftes, Wien. klin. Wchnschr., 1912, xxv, 1527.

With this technic we succeeded in passing the tube not alone in normal cases, but much to our surprise in almost all pathologic cases. Among them were many with abnormally high acidity, "pylorospasm" and probably mild grades of stenosis with roentgenologically proved motor disturbances.

We wish to emphasize two details as the result of our roentgenologic observations. First, using our technic of insertion to the 80 cm. mark, the olive is practically always found in the genu inferius *after the patient has once assumed the erect position.* Hereafter whether the patients remain erect or resume the supine posture, whether the duodenum be empty or filled, whether at rest or in full peristaltic action, the olive remains in the genu inferius. Any one can be fairly sure therefore in using our technic that the aspirated juice comes from the genu inferius, that is, distal to the entrance of the ductus choledochus and the pancreatic ducts. If the patient walks around, the olive wanders farther. It is an interesting fact that not infrequently directly after the change from the right lateral into the supine position with raised pelvis, the aspirated juice changes its reaction from acid to alkaline. The olive apparently falls through the pylorus, or at least is propelled through very rapidly; but there does not seem to be any "selective" action of the pylorus or antrum which repels this rather large foreign body. That is the chief reason why it is unnecessary to wait hours for the tube to enter the duodenum.

We agree with Gross that it is best to insert the tube on a fasting stomach. We have made direct comparisons in individual cases which showed that the tube passed more rapidly on a fasting stomach. We also suggest that patients do not smoke. During the insertion we recommend rhythmic breathing as the best remedy against the retching which often occurs during the introduction of the tube for the first time.

The detailed technic is as follows:

The fasting patient sits in a chair and swallows the olive of the freshly oiled tube, with the aid of the physician's finger if necessary. With the patient breathing rhythmically between swallows, the tube is allowed to pass in up to the 45 cm. mark, the patient holds the tube fast with his lips, and then bends forward a moment before he lays himself on the right side with raised upper body. Now the tube is held lightly between the fingers and is fed into the stomach up to 70 cm. The tube is really not shoved in, but allowed to follow the pull of the heavy olive and of the respiratory movements. Then gastric juice is aspirated and tested for its reaction. The patient remains five minutes longer on the right side with the tube held fast between the lips. The patient then rolls over on his back, and without allowing him to sit up we shove the wedge-shaped cushion or a couple of pillows under his hips. Five minutes later the tube is inserted to the 80 cm. mark. After another five minutes (often earlier) the juice is neutral or alkaline. If, as in some cases, the aspirated juice still remains acid, it is advisable to have the patient sit up a moment as the olive falls from the pars superior (which often contains acid juice) into the genu inferius. More uncommonly juice from the genu inferius may be weakly acid.

135 Stockton Street.

BROMID ERUPTION SIMULATING BLASTOMYCOSIS OR ECZEMA

HENRY KENNEDY GASKILL, M.D.
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When a patient presents himself with an eruption confined absolutely to the back of the hand, in a large percentage of cases it will be either an eczema or an erythema multiforme. In a small number it may be tertiary syphilis; still more rarely, lupus vulgaris or more rarely still, a blastomycosis. Perhaps the most unusual condition of any would be an eruption from the ingestion of bromids. To be sure, there are some other diseases which occasionally may develop on the dorsum of the hand alone, but they are the exception rather than the rule. Usually an eruption of similar character will be found on other parts of the body. The patient will frequently say that the eruption is confined to one situation, but if careful examination is made it will often be found elsewhere. This mild deception may be inadvertent; patients may not have noticed it; they may be of the type that does not bathe frequently and is not observant; at other times, they may wish to conceal, from a false sense of modesty, an eruption that would be the clue to an easy diagnosis. In teaching students, there is one point that cannot be impressed on them too frequently or too emphatically — that they must not be content with an examination of a small part of the body of any patient with a skin disease; the situation, configuration, color and type enter into the diagnosis so intimately that it is absolutely imperative that careful and thorough examinations be made.

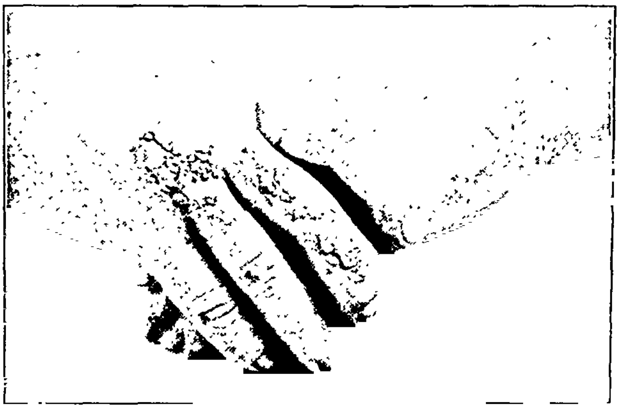

Fig. 1.—Dermatitis due to ammonium bromid (from the same case as that illustrated in H. W. Stelwagon's "Diseases of the Skin," Ed. 7, p. 460).

In the three conditions under discussion in this article, the resemblance is often so close that not only must a careful examination be made, but the microscope must also be employed and cultures made from the discharge, all of which was done in the following case:

Mr. F. W., aged 50, had been suffering from epilepsy since childhood; he had been subject to frequent attacks and had been under constant treatment for them. In February, 1913, he came to the skin dispensary of Jefferson Medical College Hospital, with a typical case of bromid eruption; it was acne-like in character—a papulopustular eruption that was confined to the back and outer aspect of the upper arms. He had been taking sodium bromid, and the eruption promptly disappeared on the withdrawal of the drug and free purgation. One of the curious factors in this case was that an eruption should occur from ingestion of any salt of bromid at this late date, for the patient had been taking the drug in one form or another for thirty years, and this was the first time that he had ever had an eruption of any type, according to his statements. Perhaps, however, they should be taken *cum grano salis*, for it is doubtful if any patient who had had a nervous affliction such as he had, could make statements on which absolute reliance could be placed. There is no history of massive doses having been given suddenly; only a gradual increase from year to year as the effect of the drug wore off. The patient suffered so from the epileptiform convulsions, however, that he begged to be put back on the bromids again, preferring an eruption to the frequent seizures. His physician on this occasion prescribed ammonium bromid, and when I saw him, Aug. 10, 1913, he had an eruption on both hands that was hypertrophic in character, raised above the surrounding skin, sharply defined, dusky red, with deep fissures running in different directions throughout the lesion, and distinctly warty in character. The large lesions resembled to some extent verrucae, only the color was different and the zones between the lesions indicated a marked inflammatory process which the latter would not show. It was of the hypertrophic type so frequently seen in babies who have been given soothing syrups that contain bromids. The eruption is shown quite clearly in Figure 1, extending down the middle finger, over the knuckle of the ring-finger and slightly on the wrist of the right hand. There were no subjective symptoms other than stiffness in moving the joints.

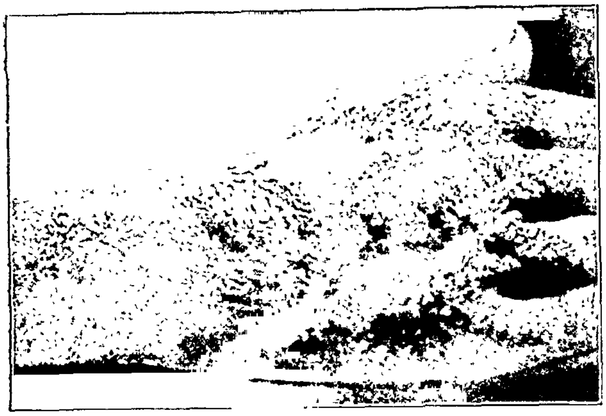
Fig. 2.—Blastomycosis (courtesy of Dr. Henry W. Stelwagon).

This patient was shown at the Philadelphia Dermatological Society, and comment was made on the resemblance that it bore to a blastomycosis. A biopsy had been performed, however, and nothing suggestive in the way of a blastomycotic condition was found. Further proof of its not being the latter was found in the therapeutic test; bromids were discontinued, purgative medicines given, and while in the course of between two and three weeks the eruption had entirely disappeared, at its height it certainly bore a very close resemblance to a blastomycosis such as shown in Figure 2. The chief points of difference, however, were the rapidity of onset, the short duration when the causative factor had been withdrawn, the lack of scarring and the color. Blastomycosis, as a rule, starts as a small papule or vesicle and progresses very slowly, and at the expiration of several weeks would not be more than half an inch in diameter. To produce an eruption such as in Figure 2 would consume many months, whereas the bromid eruption took place in a few weeks. In the patches of blastomycosis, the edges would be elevated, in some cases producing a distinct crater, and there would be a purplish discoloration in conjunction with a well-marked infiltration of tissue. Of course, the finding of the parasite within the abscesses would necessarily confirm the diagnosis of blastomycosis.

An eczema may bear a close resemblance occasionally to a blastomycosis, and much more frequently to a dermatitis caused by the ingestion of some bromid. While the larger percentage of cases would probably be eczema, yet the eruption must be closely studied to eliminate either of the other two affections. Figure 3 illustrates an eczema which might prove of some difficulty in diagnosis were it not for the intense itching and for the fact that the man had been a leather-worker. Figure 4 illustrates an entirely different type from the foregoing cases of eczema, and bears even a closer resemblance to blastomycosis or a bromid eruption. It was of the same hypertrophic growth, though to a lesser degree, and the fissuring is a marked feature. The lesion was not sharply defined, but faded off into the surrounding skin, and is only slightly raised above the healthy skin.

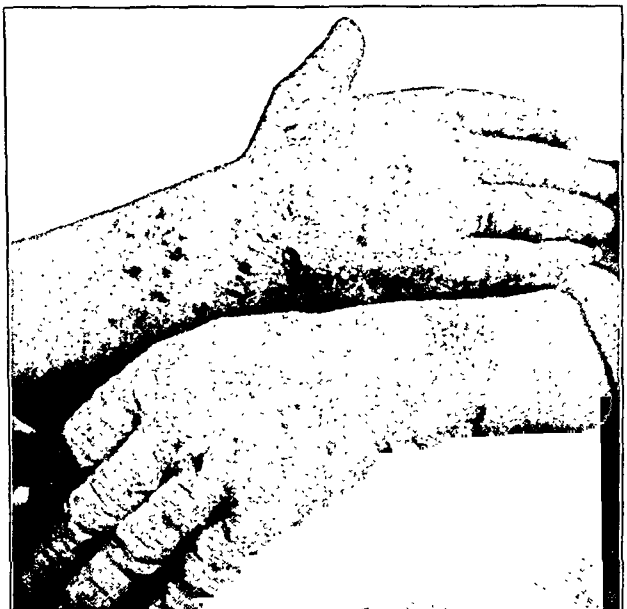
Fig. 3.—Occupational eczema.

The chief interest in this case of eruption from the ingestion of bromids lies not only in its close resemblance to blastomycosis and eczema, but also in the fact that it was produced by ammonium bromid, when on a former occasion the patient had taken sodium bromid and the acne-like eruption which is so characteristic in adults was produced. This warty fungaceous growth is not commonly seen in adults, but is much more frequent in young babies and children, while the acne-like form so frequently seen in adults is rarely seen in early life. Why salts of bromid should produce entirely different types of eruptions in adults and in infants is an interesting problem; but perhaps the explanation lies in the fact that bromid eruption in infants is usually produced by some so-called "soothing" remedy which usually contains other drugs than bromids.

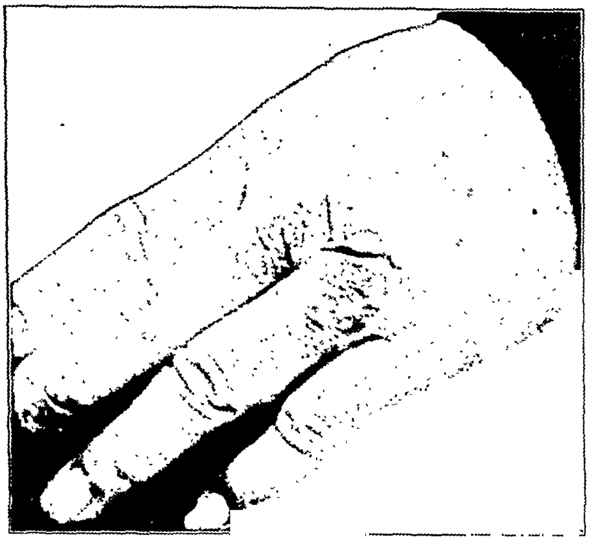

Fig. 4.—Eczema fissure.

The patient who is the subject of this paper still continues to take bromids, but in smaller doses, and has had no return of either type of eruption.

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A SUGGESTION IN THE TREATMENT OF SYPHILIS [*]

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The spinal administration of salvarsanized serum in the treatment of syphilis of the nervous system marks an important epoch in serotherapy. This mode of treatment, devised by Swift and Ellis, offers great promise for the future. The literature now contains records of experiences which indicate its efficiency in paresis and tabes. The originators of the method have controlled the intraspinal injections by repeated examinations of the spinal fluid and by a study of the subsequent clinical features of their cases. They feel that "there is definite evidence that this form of treatment has a curative action on the syphilitic process."[1] The return of an abnormal spinal fluid to normal, as the result of treatment, has been marked; and in many cases there has been an improvement in symptoms. Hough,[2] in his report of four cases, states that "we see pronounced improvement in the four reactions in all, and symptomatic in three." He further adds that in the study of the spinal fluids in 240 cases of paresis, he has never seen such pronounced improvement in the reactions as occurred under the intraspinous injections. McCaskey[3] summarizes his experience as follows:

> I only wish to say for the present that after giving twenty instraspinal injections of neosalvarsanized serum to seven patients, over a period of about three months, I have seen in some cases remarkable improvement, and believe the method . . . *to offer a new and entirely rational method of attack* on the localized infection in cases of cerebrospinal syphilis.

It is noteworthy that the new treatment has been applied to patients showing the signs and symptoms indicative of involvement of the nervous system. In all the cases on record, therefore, there has been an existing syphilitic inflammatory process, possibly with added degeneration of nervous tissue. The poor regenerative power of nervous matter is, moreover, well recognized.

The examination of the cerebrospinal fluid in cases of syphilis other than those of the nervous type has led to important findings. In a review of the literature, Nichols and Hough[4] point out that the *Spirochaeta pallida* has been demonstrated in the spinal fluid during life in four cases: twice in papular syphilis, once in hereditary syphilis, and once in syphilis of the nervous system. They add their own record of isolating, by inoculation experiment, the *Spirochaeta pallida* from the cerebrospinal fluid of a patient with nervous relapse following the use of salvarsan. Other investigators have shown by serologic, cytologic and chemical examination of the spinal fluid that the nervous system is infected early even though there are no nervous symptoms. Ravaut[5] in 1912 was of the opinion that at the time of the chancre there was no involvement of the nervous system, but that 67 per cent. of the syphilitics showing no clinical nervous symptoms had a meningeal infection, evidenced by lymphocytosis and albumin content in the spinal fluid. In a detailed study of the spinal fluid in one hundred cases of syphilis, six cases had a positive Wassermann reaction, increased cell-count and increased globulin content; and yet symptoms referable to nervous involvement were absent.[6] The frequent improvement in paresis and tabes following the intraspinal injection of salvarsanized serum, and the early involvement of the central nervous system in many cases of syphilis suggest strongly the early application of the treatment before injury to the nervous tissue is done. Our laboratory experience supplements that of other observers in obtaining positive Wassermann reactions with the spinal fluid following intravenous injections of salvarsan. Evidence has been cited showing the presence of inflammatory processes in the meninges of cases of early syphilis, and also the presence of spirochetes in the spinal fluid. The mode of attack has been indicated by Flexner. It becomes important to destroy the organisms by intraspinal injection of the therapeutic agent before they have entrenched themselves in regions of poor vascularity. Swift and Ellis have devised that agent in the form of their salvarsanized serum.

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[*] From the Bender Hygienic Laboratory.
Syphilitic Affections of the Central Nervous System with Especial Reference to the Use of Intraspinous Injections, Arch. Int. Med., September, 1913, p. 331.

[1] Swift, Homer F., and Ellis, Arthur W. M.: The Treatment of

[2] Hough, William H.: Intraspinous Injection of Salvarsanized Serum in the Treatment of Syphilis of the Nervous System, Includ- Tabes and Paresis, The Journal A. M. A., Jan. 17, 1914, p. 183.

[3] McCaskey, G. W.: The Autoserosalvarsan Treatment of Syphilis of the Central Nervous System, The Journal A. M. A., Jan. 17, 1914, p. 187.

[4] Nichols, Henry J., and Hough, William H.: Demonstration of Spirochaeta Pallida in the Cerebrospinal Fluid from a Patient with Nervous Relapse Following the Use of Salvarsan, The Journal A. M. A., Jan. 11, 1913, p. 108.

[5] Ravaut: Quoted by Engman, M. F.; Buhman, Rudolph; Gorham, F. D., and Davis, R. H.: A Study of the Spinal Fluid in One Hundred Cases of Syphilis, Including Investigations for Arsenic after Intravenous Administration of Neosalvarsan, The Journal, Sept. 6, 1913, p. 735.

[6] Engman, Buhman, Gorham and Davis: See Footnote 5.

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...ing at the onset or very early in the ...of disease, comparing the pulse-wave and ...curve of the perfectly healthy with the ...ic subject. This may lead finally to a ...comprehensive understanding of these ...ts, and may greatly assist the diagnostician, ...on with all the other signs and symptoms, to ...arly and obscure tuberculosis.

rado Avenue.

ANTIASIS, WITH A REPORT OF A CASE

JAMES PATTERSON, M.D.
CHICAGO

tiasis in temperate latitudes is rare enough more than passing notice. Most cases reported to repeated erysipeloid ...mors, granulomas, or ex-...erative interference with ...phatics of the affected area. ...[1] tells us of three cases of ...lephantiasis in which re-...acks of inflammation were ...cause of the condition. ...lt,[2] while emphasizing the ...uses suggested above, pre-...case of this disease due to ...rculosis, microscopic exam-...ailing to reveal giant cells, ...cle bacilli. Again, Thomp-...ords four cases, from one of ...icroscopic ...ns were ...nd studied ...ofessor Ewing. ...udy showed ...l picture ...edema; ...perplasia ...malpighian ...ypertrophy ...e sweat- and an ...of the ...icles. In ...Hunter[4] ...history of ...who had ...ver been outside ... British Isles and whose condition followed repeated ...ks of cellulitis. Here again the microscope showed ...g but chronic edema. The same is true of the ...reported by Van der Veer[5] and Coenen.[6] All these ...re of the opinion that elephantiasis outside the ...s due to recurrent attacks of cellulitis, tubercu-...philis, tumors or extensive operative inter... ...e lymph drainage.

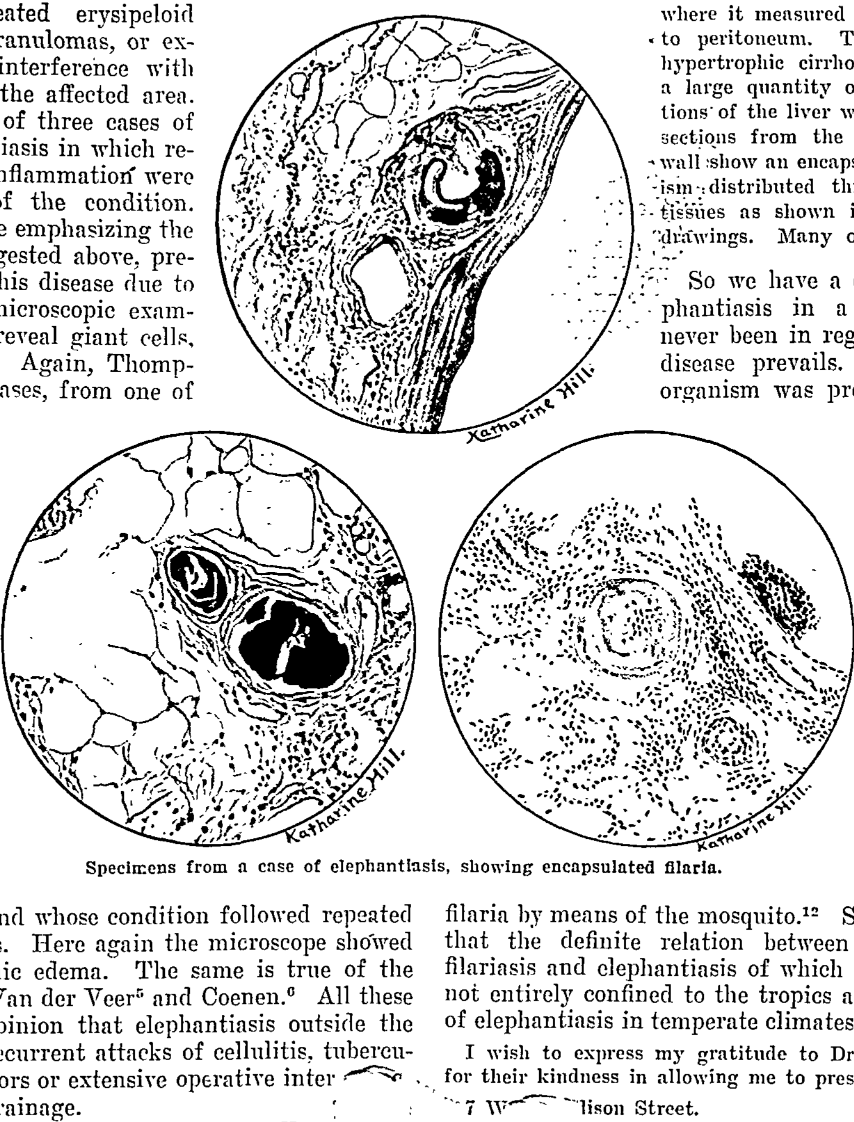
...late autumn of 1912 I saw a... ...rs. Ayres and Parker of that cit... phantiasis in a patient who had never been in the tropics. The history of the case is as follows:

Patient.—Mrs. M. K., aged 32, was born in Austria and lived there till 1903, when she and her husband moved to Ely, Minn. Shortly after her arrival the disease began to make its appearance. Patient noticed a swelling of both legs and the abdomen, beginning in 1904, which gradually grew worse until she was practically completely disabled in 1909. There is no history of cellulitis preceding this condition nor of any fever such as usually precedes a true tropical elephantiasis.[7] The blood was not examined for filaria at any time.

The patient had no living children. Three pregnancies resulted in a still-born full-term fetus in 1904, still-born seven months' fetus in 1906, abortion of a four months' pregnancy in 1908. The history is negative otherwise. No cases of a similar nature are known by her husband and friends in that part of Austria from which they come. The patient died in the spring of 1913.

A partial necropsy showed a thickening of the abdominal wall, becoming greater from the umbilicus down to the pubes, where it measured 3½ inches from skin to peritoneum. There was a marked hypertrophic cirrhosis of the liver and a large quantity of ascitic fluid. Sections of the liver were not obtained, but sections from the thickened abdominal wall show an encapsulated filarial organism distributed throughout the deeper tissues as shown in the accompanying drawings. Many of them are calcified.

So we have a case of filarial elephantiasis in a patient who has never been in regions in which that disease prevails. What variety of organism was present could not be determined, but probably it is the filaria of Bancroft, the morphology of which is gone into at length by Fulleborn[8] and also by Foley.[9] How this infection was acquired is a matter of speculation, but filariae have been found in the blood of the horse,[10] in camels,[11] and in dogs.[12] Dogs have also been inoculated with the filaria by means of the mosquito.[12] So it is just possible that the definite relation between the incidence of filariasis and elephantiasis of which Daniels[13] speaks is not entirely confined to the tropics and that some cases of elephantiasis in temperate climates are due to filariae.



Specimens from a case of elephantiasis, showing encapsulated filaria.

I wish to express my gratitude to Drs. Ayres and Parker for their kindness in allowing me to present this case.

...7 W... ...lison Street.

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2. Hough, W.: Dermat. u. Syph., 1911, c...
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THE SUGAR-CONTENT OF THE BLOOD AND ITS CLINICAL SIGNIFICANCE *

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The presence of a sugar-like substance in the blood was first shown by Dobson in 1775, in a case of diabetes. Seventy years later Claude Bernard[1] showed this substance to be a constituent of normal blood, and also demonstrated that the amount of this sugar was increased by his well-known "sugar-puncture" in the floor of the fourth ventricle. Since that time the occurrence of hyperglycemia, or an increase in the amount of the sugar found in the blood in diabetes and other conditions, has been recognized, but little attempt has been made to study it clinically until within the past three or four years. Recently newer methods for the determination of the sugar-content of the blood have been devised, putting these estimations within the reach of the clinician, and our knowledge on the subject is advancing rapidly. It is the purpose of this paper to attempt to demonstrate the value of such examinations particularly in cases of glycosuria, and to show what knowledge may be derived from this procedure that will help the clinician.

The blood of a normal adult, under average conditions of diet, exercise, etc., contains a fairly constant amount of sugar, this sugar being glucose, or the same sugar found in the urine in cases of diabetes mellitus. For the blood-plasma this amount averages between 0.08 and 0.11 per cent., the upper limit being about 0.12 per cent.[2] For the total blood the figures are slightly lower, and any content above 0.11 per cent. is to be regarded as a hyperglycemia. This upper limit is rarely exceeded in health except as a result of feeding a large amount of carbohydrates at any one time, when much higher figures may be obtained in perfectly normal individuals.[3] The sugar of the blood is derived mainly from the carbohydrates of the food, the liver storing up the sugar absorbed from the intestine and holding it in the form of glycogen as a reserve, to be delivered to the blood in the form of glucose as it is needed to supply the tissues. It is then utilized to produce heat and energy, mainly by the muscles, which also contain a moderate reserve of glycogen. The sugar in the blood is mainly either free in solution, or in such loose combination that it has the chemical properties of free sugar, though some may exist in much firmer combination.[4] This *sucre virtuel*, however, may be disregarded for practical purposes.

In health the amount of sugar in the blood is to be regarded as a physiologic constant, just as the temperature, tension of carbon dioxid, etc., are physiologic constants.[5] The means by which the organism maintains this constant has been the subject of much study. Figure 1, taken from von Noorden,[6] illustrates schematically what we know of this regulation. The newer theory of diabetes[7] assumes that the amount of sugar in the blood depends on the rapidity of "mobilization" of glycogen in the liver, and that the hyperglycemia of diabetes depends on an abnormal increase in this mobilization, together with certain other factors. Normally, the glucose absorbed from the intestines is carried along Path I, and is built up to form glycogen. As the tissues call for sugar, sending the "call" back along Path II^a, the glycogen is mobilized, to form glucose, which reaches the tissues by way of Path II^b. This mechanism, however, is markedly influenced by other factors, and the rôle that these factors play is only imperfectly understood. The pancreas is to be regarded as having an inhibitory effect on the mobilization, through its internal secretion, so that an interference with this internal secretion, by removal of the pancreas or otherwise, results in the loss of this inhibition and an increased mobilization of the glycogen. On the other hand, the adrenals, through the liberation of epinephrin in the blood, are regarded as having a stimulating effect on this mobilization, an increase in the amount of epinephrin in the blood producing a hyperglycemia and glycosuria. It has been assumed, by von Noorden and others, that the hyperglycemia following removal of the pancreas is due to the fact that the epinephrin in the blood is allowed to act unopposed on the liver-cells, thus increasing the rate of mobilization of the glycogen. Both the pancreas and the adrenals are under the influence of still other factors. The activity of the pancreas is influenced by the activity of the thyroid, increased activity of the thyroid resulting in decreased activity of the pancreas and a corresponding increase in the rate of glycogen mobilization and a decreased tolerance to sugar. This explains the decreased tolerance to carbohydrates often observed in hyperthyroidism. The reverse occurs in hypothyroidism, these patients having a greater tolerance to sugar. The activity of the adrenals is influenced by the sympathetic nervous system, probably controlled by a center in the floor of the fourth ventricle. Irritation of this center by a "sugar-

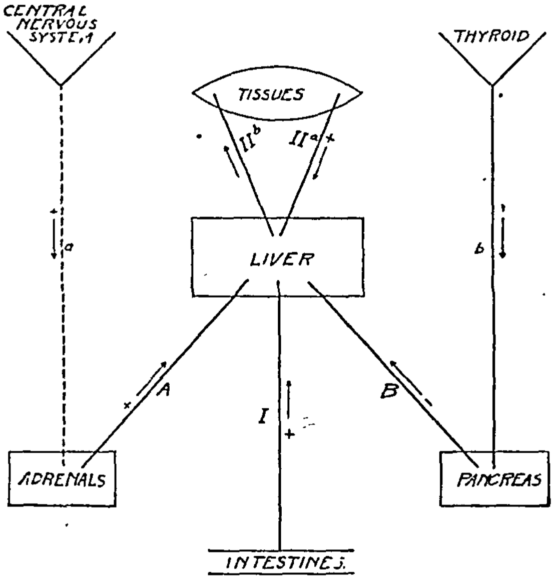

Fig. 1.—Schematic illustration (from von Noorden) of control of amount of sugar in blood; + = stimulation; — = depression; – – – – = nerve-paths; ———— = blood-paths; → = direction of action.

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* From the Laboratory of Pharmacology, Department of Medicine, University of Oregon.

* Read before the Portland City and County Medical Society, Jan. 21, 1914.

[1] Bernard, Claude: Referred to in MacLeod: Diabetes: Its Pathological Physiology, London, 1913, p. 23.

[2] Renal Diabetes, editorial, THE JOURNAL A. M. A., Nov. 1, 1913, p. 1632.

[3] Jacobsen: Biochem. Ztschr., 1913, lxvi, 471; referred to in The Variations in the Content of Sugar in the Blood, editorial, THE JOURNAL A. M. A., Jan. 10, 1913, p. 131.

[4] Lépine: Le diabète sucré, Paris, 1909, p. 59.

[5] MacLeod: Diabetes, p. 52.

[6] Von Noorden: Die Zuckerkrankheit, Ed. 6, Berlin, 1912, p. 171.

[7] The Changing Theories of Diabetes, editorial, THE JOURNAL A. M. A., Aug. 2, 1913, p. 348.

puncture," concussion, pressure from a tumor, etc., would cause an increase in the amount of epinephrin in the blood through the stimulation of this mechanism, and thereby result in a hyperglycemia and glycosuria. Other factors, such as the internal secretion of the posterior lobe of the hypophysis, the internal secretion of the parathyroids, etc., have also an influence on carbohydrate metabolism, but our knowledge of this influence is too imperfect to permit us to draw any conclusions. It may be seen from the diagram that the primary disturbance in diabetes may be in any one of numerous situations. According to von Noorden,[8] primary anomalies of the liver-cells are the least common, and disturbances of the function of the pancreas the most common, other cases coming possibly from interference with the nervous control of the adrenals or from abnormalities of the adrenals themselves. Disturbances of the thyroid probably do not cause true diabetes.

The nature of the stimulus to the mobilization of glycogen from the liver, sent back by the tissues in need of sugar, or rather the intermediary regulator of the whole mechanism, is not known. The possibility of "hormone" control has been suggested by numerous authors (MacLeod[9]), but the nature of the hormones has not been proved. It seems reasonable to suppose that this hormone might be a product of the metabolism of dextrose, just as the oxygen intake of the body is regulated by the carbon dioxid content of the blood. This product may be carbonic acid, lactic acid, or some other end-product of the utilization of sugar in the muscles, the use of an increased amount of sugar resulting in an increased amount of lactic acid, for example, and the increased lactic acid content of the blood either acting directly on the liver-cells or at some point on the regulatory mechanism to increase the mobilization of glycogen in the liver.

The amount of sugar present in the circulating blood at any time may be determined by one of a number of methods, all of which are a trifle complex for the average clinical laboratory, in that they require special apparatus, standardized solutions and some knowledge of volumetric analysis. The method used by us in all of our determinations is one of the older methods, but is accurate, not time-consuming, and gives constant results. The method of precipitating the proteins from the blood was described by Schenck.[10] The method of determining the amount of sugar in the clear filtrate was described by Bertrand,[11] and his method is the most accurate method for the determination of glucose in small amounts.

The combined method is as follows:

Five c.c. of a 1 per cent. potassium oxalate solution are accurately measured from a pipet into a dry 50-c.c. volumetric flask. The blood is withdrawn from the patient's arm vein by letting it flow through a needle directly into the oxalate solution, which prevents clotting. From 10 to 15 c.c. are collected in this manner, no attempt being made to measure the amount withdrawn directly. The flask is now filled to the mark with water from a buret. The amount of blood withdrawn is then determined by difference, subtracting the amount of water used from the buret from 45, the capacity of the flask after 5 c.c. of oxalate solution had been put into it. The amount is recorded and is later used to calculate the percentage of sugar. The mixture in the flask is then poured into an Erlenmeyer flask of about 250-c.c. capacity, the measuring flask then filled with 2 per cent. hydrochloric acid to the mark, the hydrochloric acid poured into the blood mixture, and the same process repeated with 5 per cent. mercuric chlorid. The amount of the mixture now totals 150 c.c., and an aliquot part of this amount is later used in determining the total amount of sugar in the mixture.

After being thoroughly mixed, and allowed to stand about five minutes, the mixture is filtered through a dry filter into a second dry flask. It should filter rapidly and be perfectly clear. As the excess of mercury interferes with the sugar determination it must be removed, which is done by passing hydrogen sulphid through the liquid until precipitation is complete, which requires about ten minutes. After the precipitate is filtered off the excess of hydrogen sulphid is removed from the filtrate by a current of air passed through it for from ten to fifteen minutes, and the clear solution is now ready for the sugar estimation by Bertrand's method. Fifty c.c. of the solution are carefully measured from a pipet into an Erlenmeyer flask of about 250-c.c. capacity, the acid is neutralized with a strong solution of potassium hydroxid, and 20 c.c. each of Bertrand's copper and alkali solutions are added. These solutions have the following formulas:

I

Crystalline copper sulphate, C. P.	40
Distilled water to	1,000

II

Potassium sodium tartrate, C. P.	200
Sodium hydroxid (sticks)	150
Distilled water to	1,000

The mixture is now brought to a boil in about two minutes, and is allowed to boil rather gently for exactly three minutes. It is allowed to cool and then filtered through a specially prepared asbestos filter which collects the cuprous oxid reduced by the sugar. The cuprous oxid in the filter and that remaining in the flask after being washed well are dissolved in 20 c.c. of Bertrand's iron solution, having the following formula:

III

Ferric sulphate (not ferrous)	50
Sulphuric acid (concentrated)	200
Distilled water to	1,000

The whole solution is washed through a filter into a clean filter flask below with from 50 to 100 c.c. of water, and the mixture saved for titration. The amount of copper present in the solution is determined by titration with a standard solution of potassium permanganate, 1 c.c. of which represents 2 mg. of cuprous oxid. This solution is made by dissolving 5 gm. of potassium permanganate in 1,000 c.c. of water, and adjusting the solution until 22.5 c.c. are just decolorized by 0.250 gm. of ammonium oxalate.

For the standardization, 0.25 gm. of ammonium oxalate is weighed out carefully and warmed with 100 c.c. of water and 2 c.c. concentrated sulphuric acid to from 60 to 80 C. This is titrated with the potassium permanganate solution until a rose color appears, and the strength of the solution adjusted, if necessary, until it is of the right concentration so that 22.5 c.c. will just cause a rose color in the oxalate solution. This solution keeps well if tightly stoppered and kept in a dark place. Just before titration of the copper it is diluted 1:5 volumetrically, and the diluted solution represents 2 mg. copper to each cubic centimeter. The permanganate is now run carefully into the iron-copper solution, until a permanent rose color just appears, and the amount of copper is then determined directly by multiplying the number of cubic centimeters of permanganate solution used by 2. The amount of glucose is then calculated from Table 1, and the total amount

TABLE 1.—FOR SUGAR ESTIMATION[12]

Copper in mg. =	Sugar in mg.	Copper in mg. =	Sugar in mg.
1.1	0.5	11.5	5.5
2.2	1.0	12.5	6.0
3.3	1.5	13.5	6.5
4.4	2.0	14.5	7.0
5.5	2.5	15.5	7.5
6.5	3.0	16.5	8.0
7.5	3.5	17.5	8.5
8.5	4.0	18.5	9.0
9.5	4.5	19.5	9.5
10.5	5.0	20.5	10.0

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[8] Von Noorden: Die Zuckerkrankheit, p. 173.

[9] MacLeod: Diabetes, p. 83.

[10] Schenck: Arch. f. d. ges. Physiol. (Pflüger's), 1894, lv, 203.

[11] Bertrand: Bull. Soc. chim. de Paris, 1906, xxxv, 1285.

[12] Moeckel and Frank: Ztschr. f. phys. Chem., 1910, lxv, 325

found is divided by the number of cubic centimeters of blood withdrawn to determine the amount in each cubic centimeter. One mg. per cubic centimeter of blood represents 0.1 per cent.

The results obtained by this method are said to be slightly lower than those obtained by other methods, but the methods said to be superior are much more difficult and time-consuming. Other methods, such as that of Kowarsky, are somewhat simpler and require less blood, but are correspondingly less accurate.

In pathologic conditions the amount of sugar found in the blood may vary within wide limits. As already mentioned, the content of normal blood rarely exceeds 0.11 per cent., and then only as the result of feeding a large amount of carbohydrates at one time. In diabetes, however, this amount may be increased by several hundred per cent., and results of 0.36 per cent. and higher are very common. Rolly and Oppermann[13] have found amounts exceeding 1 per cent. in diabetic coma. In our series results of practically 0.7 per cent. have been obtained in two cases. The amount in the blood in diabetics is very susceptible to changes in diet, because of the disturbance of the physiologic adjustment. Thus a greater increase in the blood-sugar content asserts itself in the abnormal than in normal persons after an identical intake of carbohydrate.[3]

The relation between the sugar in the blood and that in the urine, while not constant, shows certain tendencies. The appearance of sugar in the urine is to be regarded as an overflow from the blood when the concentration in the blood reaches a certain point. That is, the kidneys, while normally excreting practically no sugar, act as a safety-valve to prevent the accumulation of large amounts of it in the blood. Usually this overflow occurs when the sugar of the blood reaches a concentration of about 0.15 per cent., although this threshold may be altered in certain cases of diabetes, being either raised or lowered.[14] This is illustrated in three of our cases, in which values of 0.19, 0.198 and 0.182 per cent., respectively, were obtained in the blood when no sugar was found in the urine, though sugar had previously been found in all three cases. In these cases the results of treatment must be watched entirely by the blood-sugar, as the sugar appears in the urine only when a marked hyperglycemia is present, and does not serve as a guide to dietetic treatment. The threshold is also somewhat higher in normal persons, as Jacobsen[3] has shown that the content of sugar in normal persons may be raised by overfeeding with carbohydrate to 0.16 or 0.17 per cent. without inducing an elimination of glucose.

One is led to infer, therefore, that the elimination of glucose through the kidney-cells causes certain alterations to their susceptibility to the presence of increased amounts of sugar in the blood. After the presence of sugar in the urine has become established, the amount rises rapidly in proportion to the amount in the blood. This is shown in Figure 2, the curve being plotted from the comparative amounts of sugar in the blood and in the urine in our series. In preparing this curve atypical results were disregarded, the average typical results being used. MacLeod[15] has shown that the fall of the blood-sugar curve following stimulation of the splanchnics is much more rapid than the fall of the urinary-sugar curve. This is probably due to the fact that the kidneys become accustomed to excreting large amounts of sugar, and react slowly to the decrease in the amount in the blood. The same occurrence is noted in certain cases of diabetes. For example, in Cases 5 and 14 of our series, after marked reduction in the blood-sugar, the amount in the urine remained disproportionately high. Table 2, from which the curve was plotted, shows the relation of the urinary sugar to the blood-sugar in our cases. The first five were normal persons, the others all cases of glycosuria, though numerous examinations were made during aglycosuric periods. All estimations of urinary sugar were made simultaneously with the blood-sugar, the polarimeter being used in every case.

TABLE 2.—RELATION OF URINARY SUGAR TO BLOOD-SUGAR

Case No.	Percentage of Sugar in Blood	Percentage of Sugar in Urine	Case No.	Percentage of Sugar in Blood	Percentage of Sugar in Urine
Normal	0.076	0	4	0.19	+
Normal	0.082	0	15	0.198	0
Normal	0.087	0	5	0.26	5.3
Normal	0.099	0	14	0.275	6.4
Normal	0.10	0	7	0.29	1.5*
10	0.111	0	12	0 36	6.4
9	0 127	0	11	0.38	4.8
13	0.133	0	1	0.39	6.8
3	0.14	0	8	0.40	6.3
1	0.15	0.8	6	0.56	6.85
11	0.158	0.1	16	0.63	8.0
9	0.182	0	14	0.69	8.0
2	0.19	0	5	0.72	8.0

* Coma.

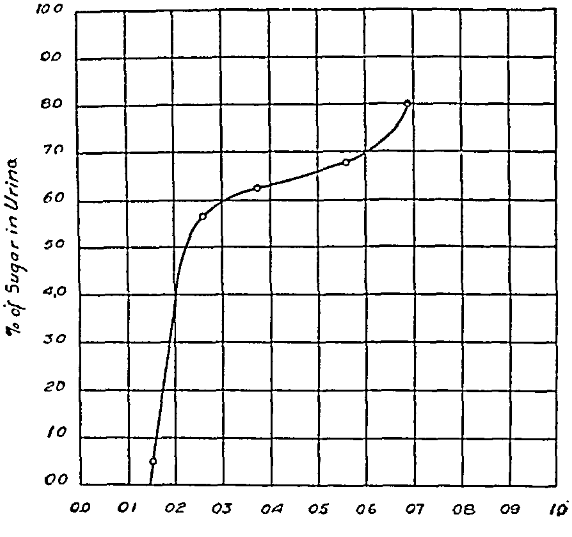

Fig. 2.—Relation of urinary sugar to blood-sugar.

The detailed report of these cases will form the subject of a later communication, but Table 2 illustrates much of what is to be derived from the study. It may readily be seen that the sugar-content of the urine does not give a true index of the amount in the blood, and that a direct determination of the amount in the blood must be made if one desires to have knowledge of it. The retention of sugar in coma is illustrated in Case 7, in which, with a relatively high blood-sugar content, the urinary content is low. The daily excretion of sugar is not shown in this table, and except from the point of view of loss in caloric value by excretion of sugar, the daily excretion is unimportant if blood-sugar estimations are made.

Besides the interest attached to the foregoing observations from the experimental point of view, we find that the estimation of the sugar in the blood may be of very great value from the practical point of view. The procedure finds its greatest clinical value in the diagnosis, prognosis and control of treatment in cases of diabetes mellitus. The finding of hyperglycemia alone does not prove the existence of diabetes mellitus, as we have shown that a transient increase in the amount of sugar in the blood may occur as a result of overfeeding with carbohydrates, or as a result of sudden discharge of glycogen from the liver. If, however, a hyperglycemia remains persistent after the withdrawal of carbohydrates from the diet for twenty-four hours or more, the case should be regarded as diabetes, even if the glycosuria disappears under these conditions. For example, in Case 2 the patient had glycosuria only at times, the sugar entirely disappearing from the urine after twenty-four hours on a carbohydrate-free diet. The blood after such a period showed 0.19 per cent. of sugar, which demonstrates that the case was not merely a transitory alimentary glycosuria, so-called, but a true case of diabetes. In Case 10, however, in which the patient had a glycosuria due to a cerebral disturbance, the blood twenty-four hours after sugar had been present in the urine showed a content of 0.111 per cent., or practically a normal content, even on a mixed diet. This would of course rule out a true diabetes mellitus. In any case of glycosuria, when there is doubt as to the true nature of the glycosuria, an estimation of the sugar in the blood, under proper control of the diet, should be made to make or disprove the diagnosis of diabetes mellitus.

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[13] Rolly, F., and Oppermann, F.: Biochem. Ztschr., 1913, xlix, 278; referred to in The Blood-Sugar in Human Diabetes, Current Comment, THE JOURNAL A. M. A., Aug. 9, 1913, p. 418.

[14] MacLeod: Diabetes. Diefmann and Stern: Biochem. Ztschr., 1906, i, 299.

[15] MacLeod: Diabetes, p. 47.

As a guide to treatment and to the results of dietetic measures the estimation of this sugar-content of the blood is also of great value. We have long been accustomed to follow the excretion of sugar in the urine as an index to the progress of the case, though, as we have shown, the sugar-content of the blood, which is the primary condition, is not accurately indicated by the excretion in the urine. In cases in which it is possible, and this has been adopted as a routine in many European clinics, the results of treatment should be followed by blood-sugar estimations. Especially is this true when the sugar has disappeared from the urine. The time-honored method in such cases has been to determine the tolerance to carbohydrate by determining the amount necessary to cause a reappearance of sugar in the urine, and to give all that can be tolerated without glycosuria. We find that in many cases this is unjustifiable, as a patient may have constantly a blood-sugar content of 0.18 per cent. or even higher without the appearance of sugar in the urine.

For example, in Case 9, in Table 2, at the first examination of the blood after the patient had been rendered aglycosuric by a carbohydrate-free diet, a sugar-content of 0.127 per cent. was found. Following this the tolerance was tested, and it was found that the patient could take about 200 gm. of carbohydrate daily without a glycosuria. After six weeks on such a diet a second examination of the blood was made, and a sugar-content of 0.182 per cent. was found. It would manifestly be wrong to allow such a patient to continue on such a liberal allowance of carbohydrate, for though the urine was sugar-free, the presence of 0.182 per cent. of sugar in the blood may lead to various complications, and is almost certain to lead to a diminished tolerance to sugar. The diet regulation in such cases should aim at keeping the concentration in the blood at approximately normal, and not merely at keeping the urine sugar-free. In other cases, too, of very mild diabetes, unnecessary starving of the patient may often be avoided. The effect of the dietetic measures of the blood-sugar also affords a valuable key to the prognosis. In cases in which a normal concentration is easily reached and maintained, the prognosis should be good, though the other factors of acidosis, age of patient, etc., must always be taken into account. The actual amount of sugar found in the blood, as also the amount found in the urine, gives no guide to the severity of the case unless these observations are made after careful regulation of the diet.

In other forms of glycosuria the chief value of the blood-sugar determination lies in the ability of the clinician to rule out diabetes mellitus, and thus to find a better prognosis and often to allay the fears of the patient, who has in many cases been told that he has an incurable and rapidly fatal disease. For example, it has recently been shown[16] that in most cases of glycosuria occurring in pregnancy the blood-sugar remains normal or even slightly diminished, showing that the glycosuria is entirely of renal origin, and that it is by no means to be regarded as diabetes mellitus. In these cases, of course, the prognosis is good, and it is unnecessary to burden the patient with the dietetic regimen of a diabetic. Cases of cerebral glycosuria, so-called, are usually transitory, and occur after injury, or from pressure of a tumor, etc. As shown above, they are due to a disturbance of the center in the floor of the fourth ventricle. In these cases, as in Case 10, the blood-sugar rapidly falls to normal following the excretion of the sugar set free in the circulation from the liver. In such cases it may be of value to determine whether the glycosuria is a result of a cerebral condition or whether the cerebral symptoms are a result of diabetes, and this may readily be done by blood-sugar estimations under proper control. In cases of alimentary glycosuria[17] the hyperglycemia due to overfeeding with carbohydrates rapidly diminishes after the ingestion of carbohydrates is stopped, and such a test should be made when a transitory glycosuria is accidentally discovered. This transitory hyperglycemia and glycosuria are not to be regarded as diabetic symptoms, and one may often reassure the patient after a careful study of the case. This feature may come to be of value in life-insurance examinations, for though some of these patients later develop true diabetes, it is quite probable that an injustice is done in some cases by refusing insurance to them.

In conclusion I wish to thank those physicians who have so kindly cooperated in furnishing assistance and material for this work.

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[16] Frank, Erich: Arch. f. exper. Path. u. Pharmakol., 1913, lxxii, 387, referred to in Renal Diabetes, editorial, THE JOURNAL A. M. A., Nov. 1, 1913, p. 1632.

[17] The Variations in the Content of Sugar in the Blood, editorial, THE JOURNAL A. M. A., Jan. 10, 1914, p. 131.

Poisoning by Quinin Tablets.—Quinin poisoning is relatively rare because of the bitterness of the drug in the form in which it is usually taken. In Algiers, however, it is sold at a low price under government regulation in the form of tablets for the prophylaxis of malaria. These tablets are coated with sugar colored with carmin. The colored coating is so attractive to children that the tablets are readily taken in spite of the slight bitterness. H. Pecker in *Journal de pharmacie et de chimie* (Feb. 16, 1914, p. 162) reports a case in which a boy of 7 swallowed forty-five such tablets, containing in all 9 gm. of quinin hydrochlorid, or 6.6 gm. (102 grains) of the alkaloid. Death rapidly ensued; the child made some efforts to vomit, had convulsions, became comatose and died two hours after the ingestion of the poison. The attractive form and quick absorption of the drug were important factors in this accident.

BENZOL TREATMENT IN TWO CASES OF LEUKEMIA

F. H. SMITH, M.D.
ABINGDON, VA.

Within the past eighteen months a new hope has dawned in the treatment of a disease heretofore regarded as hopeless: I refer to the use of benzol (benzene, C_6H_6) in the leukemias, the history of which dates from the publication of Koranyi's article in July, 1912. Koranyi's clinical use of this chemical was prompted, it should be said, by an almost accidental run of cases in Dr. Barker's clinic at the Johns Hopkins Hospital in 1909. These cases, briefly, were of three young girls whose occupation brought them into contact with crude benzol in the manufacturing trade; each presented evidences of a grave aplastic anemia and a striking leukopenia, and two of the three died. Prompted by this series of cases, Dr. Selling,[1] of the same institution, undertook certain experimental work, by which he demonstrated a powerful leukotoxic action of the drug.

On this ground Koranyi argued that benzol is what is needed in leukemia, and to him, of course, must be given credit for its clinical use, of which he says in his first article[2] that there were no failures under treatment and that no serious by-effects were observed. Kiralyfi[3] next reported seven cases of leukemia in which he had used benzol, in all of which the blood-picture and the clinical symptoms and signs subsided within from three weeks to five months. Then Stein[4] reported a case with very favorable results obtained after six weeks of treatment; Stern[5] reported another after two months of treatment; Dr. Billings[6] of Chicago added five others, with the suggestion of sufficient encouragement to prompt its further use. Klein,[7] writing from the large experience of twenty-two cases treated within six months, summarizes his experience by stating that though his results are not so encouraging as Koranyi's and Kiralyfi's, he still thinks that benzol is destined to play an important rôle in leukemia. Finally, Rösler[8] reports two cases apparently cured, and yet he adds the warning that the period of observation has been too short to permit of definite conclusions.

There are several references already to the use of benzol with more or less success in several allied conditions—enlargement of lymph-nodes without leukocytosis, the pseudoleukemias, polycythemia, etc.;[9] one a report of Lawson and Thomas[10] of its use in Hodgkin's disease with apparent cure, an observation all the more interesting because of the fact that in the same issue in which their report appears Drs. Billings and Rosenow,[11] in a preliminary report, seem to confirm the findings of Bunting and Yates of a specific organism in this disease. Kiralyfi[12] reports two cases of inoperable mammary cancer in which he applied benzol locally. In both cases cancer tissue was destroyed by direct contact of benzol, but extension beyond continued unmodified. He says that there can be no question of its curative influence in cancer, in the same way as the Roentgen ray, thorium, etc.

Even now, however, not all reports are so optimistic. Wachtel,[13] for instance, mentions two cases in one of which he was obliged to drop benzol because of albuminuria arising the third day; the second case showed apparent cure. Nevertheless, as he observes, the leukemia itself is not yet eradicated, as myelocytes are still present. Koranyi himself in a later report[14] mentions two (out of eight cases) of failure: in one the drug was not tolerated; in the other benzol failed, as did also the Roentgen ray and thorium. Quadrone and Buzzanò[15] report little if any benefit in four cases treated. Klemperer and Hirschfeld[16] go further and regard it a dangerous remedy, as it caused serious injury in animal researches, to which Koranyi has replied that the conditions with a healthy experimental animal and the human being the victim of leukemia are very different propositions. They may have been influenced in their opinion, moreover, by the fact that they tried it in three cases of pernicious anemia, in two with no effect (as it seems would be expected from the action of the chemical), in the third they say with unmistakably curative effect, but no more than after arsenic.

On top of these more or less pessimistic reports are others which cause even more speculation. I refer to those of Jespersen[17] and Neumann.[18] The former cites a case in which, while benzol caused a prompt and marked drop from a high number to below normal within the expected time, until the patient was considered well, yet the remarkable improvement did not last long, the disease flared up again, leukocytes ran up to 750,000, and the patient died the twenty-second day after recurrence of the symptoms, the dosage never exceeding 5 gm. daily. Neumann warns against building too high hopes on the treatment: he treated a case on Koranyi's plan and in thirty-six days so much improvement occurred that the patient felt that she was cured; but soon afterward the general health grew worse and worse, fever and diarrhea followed, with epistaxis, stomatitis and rhinitis, and she died thirty-nine days after the course of benzol. The similarity of these two cases of two observers, in both of which a chronic case evidently took on an acute phase coincident with, or subdiabetes mellitus. The finding of hyperglycemia alone does not prove the existence of diabetes mellitus, as we have shown that a transient increase in the amount of sugar in the blood may occur as a result of overfeeding with carbohydrates, or as a result of sudden discharge of glycogen from the liver. If, however, a hyperglycemia remains persistent after the withdrawal of carbohydrates from the diet for twenty-four hours or more, the case should be regarded as diabetes, even if the glycosuria disappears under these conditions. For example, in Case 2 the patient had glycosuria only at times, the sugar entirely disappearing from the urine after twenty-four hours on a carbohydrate-free diet. The blood after such a period showed 0.19 per cent. of sugar, which demonstrates that the case was not merely a transitory alimentary glycosuria, so-called, but a true case of diabetes. In Case 10, however, in which the patient had a glycosuria due to a cerebral disturbance, the blood twenty-four hours after sugar had been present in the urine showed a content of 0.111 per cent., or practically a normal content, even on a mixed diet. This would of course rule out a true diabetes mellitus. In any case of glycosuria, when there is doubt as to the true nature of the glycosuria, an estimation of the sugar in the blood, under proper control of the diet, should be made to make or disprove the diagnosis of diabetes mellitus.

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[1] Selling, L.: Benzol as a Leucotoxin, Johns Hopkins Rep.: Monograph, New Series, No. II.

[2] Von Koranyi, A.: Effectual Modification of Leukemic Blood-Picture by Benzol, Berl. klin. Wchnschr., 1912, xlix, 29; abstr., The Journal A. M. A., Aug. 31, 1912, p. 755.

[3] Kiralyfi, G.: Benzol in Treatment of Leukemia, Wien. klin. Wchnschr., 1912, xxv, No. 35; abstr., The Journal A. M. A., Oct. 5, 1912, p. 1333.

[4] Stein: Wien. klin. Wchnschr., Dec. 5, 1912; abstr., Progr. Med., June 13, p. 328.

[5] Stern, S.: Benzol in Leukemia, Wien. klin. Wchnschr., 1913, xxvi, No. 10; abstr., The Journal A. M. A., April 10, 1913, p. 1270.

[6] Billings, Frank: Benzol in the Treatment of Leukemia, The Journal A. M. A., Feb. 15, 1913, p. 495.

[7] Klein, S.: Action of Benzol on Leukemic Process, Wien. klin. Wchnschr., 1913, xxvi, No. 10; abstr., The Journal A. M. A., April 10, 1913, p. 1270.

[8] Rösler: Wien. klin. Wchnschr., 1913, xxvi, 838; abstr. Am. Jour. Med. Sc., October, 1913, p. 608.

[9] Kiralyfi, G.: Therapeutic Use of Benzol, Wien. klin. Wchnschr., 1913, xxvi, 1062; abstr., Am. Jour. Med. Sc., January, 1914, p. 145.

[10] Lawson, G. B., and Thomas, E. A.: A Case of Hodgkin's Disease Treated with Benzene, The Journal A. M. A., Dec. 13, 1913, p. 2157.

[11] Billings, Frank, and Rosenow, E. C.: Etiology and Vaccine Treatment of Hodgkin's Disease, The Journal A. M. A., Dec. 13, 1913, p. 2122.

[12] Kiralyfi, G.: Benzol in Local Treatment of Cancer, Berl. klin. Wchnschr., 1913, L, No. 43; abstr., The Journal A. M. A., Dec. 6, 1913, p. 2110.

[13] Wachtel, S.: Benzol in Leukemia, Deutsch. med. Wchnschr., 1913, xxxix, No. 7; abstr., The Journal A. M. A., March 22, 1913, p. 949.

[14] Von Koranyi, A., and Tedesko, F.: Benzol in Treatment of Leukemia, Wien. klin. Wchnschr., 1913, xxvi, No. 4; abstr., The Journal A. M. A., March 13, 1913, p. 707.

[15] Quadrone, C., and Buzzano, C. U.: Benzol in Leukemia, Riforma Med., 1913, xxix, Nos. 42 and 43; abstr., The Journal A. M. A., Dec. 13, 1913, p. 2202.

[16] Klemperer, G., and Hirschfeld, H.: Therap. d. Gegenw., 1913, liv, No. 2; abstr., The Journal A. M. A., March 15, 1913, p. 872.

[17] Jespersen, K.: Fatal Result Following Benzol Treatment of Leukemia, Deutsch. med. Wchnschr., 1913, xxxix, 1300; abstr., Am Jour. Med. Sc., November, 1913, p. 766.

[18] Neumann, W.: Benzol in Treatment of Leukemia, Therap. d. Gegenw., 1913, liv, No. 2; abstr., The Journal A. M. A., March 15, 1913, p. 872.

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There are several references already to the use of benzol with more or less success in several allied conditions—enlargement of lymph-nodes without leukocytosis, the pseudoleukemias, polycythemia, etc.:[9] one a report of Lawson and Thomas[10] of its use in Hodgkin's disease with apparent cure, an observation all the more interesting because of the fact that in the same issue in which their report appears Drs. Billings and Rosenow,[11] in a preliminary report, seem to confirm the findings of Bunting and Yates of a specific organism in this disease. Kiralyfi[12] reports two cases of inoperable mammary cancer in which he applied benzol locally. In both cases cancer tissue was destroyed by direct contact of benzol, but extension beyond continued unmodified. He says that there can be no question of its curative influence in cancer, in the same way as the Roentgen ray, thorium, etc.

Even now, however, not all reports are so optimistic. Wachtel,[13] for instance, mentions two cases in one of which he was obliged to drop benzol because of albuminuria arising the third day; the second case showed apparent cure. Nevertheless, as he observes, the leukemia itself is not yet eradicated, as myelocytes are still present. Koranyi himself in a later report[14] mentions two (out of eight cases) of failure: in one the drug was not tolerated; in the other benzol failed, as did also the Roentgen ray and thorium. Quadrone and Buzzano[15] report little if any benefit in four cases treated. Klemperer and Hirschfeld[16] go further and regard it a dangerous remedy, as it caused serious injury in animal researches, to which Koranyi has replied that the conditions with a healthy experimental animal and the human being the victim of leukemia are very different propositions. They may have been influenced in their opinion, moreover, by the fact that they tried it in three cases of pernicious anemia, in two with no effect (as it seems would be expected from the action of the chemical), in the third they saw with unmistakably curative effect, but no more than after arsenic.

On top of these more or less pessimistic reports are others which cause even more speculation. I refer to those of Jespersen[17] and Neumann.[18] The former cites a case in which, while benzol caused a prompt and marked drop from a high number to below normal within the expected time, until the patient was considered well, yet the remarkable improvement did not last long, the disease flared up again, leukocytes ran up to 750,000, and the patient died the twenty-second day after recurrence of the symptoms, the dosage never exceeding 5 gm. daily. Neumann warns against building too high hopes on the treatment: he treated a case on Koranyi's plan and in thirty-six days so much improvement occurred that the patient felt that she was cured; but soon afterward the general health grew worse and worse, fever and diarrhea followed, with epistaxis, stomatitis and rhinitis, and she died thirty-nine days after the course of benzol. The similarity of these two cases of two observers, in both of which a chronic case evidently took on an acute phase coincident with, or subsequent to, the use of benzol, leads to the speculation as to whether the benzol itself had anything to do with the conversion, in answer to which Jespersen expresses the belief that the flare-up was due not to benzol poisoning, but to a recurrence of leukemia in an acute form. Neumann, too, admits that it is a very effectual remedy, but naturally adds that its use requires the greatest caution; we are left to draw our own conclusions.

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[1] Selling, L.: Benzol as a Leucotoxin, Johns Hopkins Rep.: Monograph, New Series, No. II.

[2] Von Koranyi, A.: Effectual Modification of Leukemic Blood-Picture by Benzol, Berl. klin. Wchnschr., 1912, xlix, 29; abstr., The Journal A. M. A., Aug. 31, 1912, p. 755.

[3] Kiralyfi, G.: Benzol in Treatment of Leukemia, Wien. klin. Wchnschr., 1912, xxv, No. 35; abstr., The Journal A. M. A., Oct. 5, 1912, p. 1333.

[4] Stein: Wien. klin. Wchnschr., Dec. 5, 1912; abstr., Progr. Med., June 13, p. 328.

[5] Stern, S.: Benzol in Leukemia, Wien. klin. Wchnschr., 1913, xxvi, No. 10; abstr., The Journal A. M. A., April 10, 1913, p. 1270.

[6] Billings, Frank: Benzol in the Treatment of Leukemia, The Journal A. M. A., Feb. 15, 1913, p. 495.

[7] Klein, S.: Action of Benzol on Leukemic Process, Wien. klin. Wchnschr., 1913, xxvi, No. 10; abstr., The Journal A. M. A., April 10, 1913, p. 1270.

[8] Rösler: Wien. klin. Wchnschr., 1913, xxvi, 838; abstr. Am. Jour. Med. Sc., October, 1913, p. 608.

[9] Kiralyfi, G.: Therapeutic Use of Benzol, Wien. klin. Wchnschr., 1913, xxvi, 1062; abstr., Am. Jour. Med. Sc., January, 1914, p. 145.

[10] Lawson, G. B., and Thomas, E. A.: A Case of Hodgkin's Disease Treated with Benzene, The Journal A. M. A., Dec. 13, 1913, p. 2157.

[11] Billings, Frank, and Rosenow, E. C.: Etiology and Vaccine Treatment of Hodgkin's Disease, The Journal A. M. A., Dec. 13, 1913, p. 2122.

[12] Kiralyfi, G.: Benzol in Local Treatment of Cancer, Berl. klin. Wchnschr., 1913, L, No. 43; abstr., The Journal A. M. A., Dec. 6. 1913, p. 2110.

[13] Wachtel, S.: Benzol in Leukemia, Deutsch. med. Wchnschr., 1913, xxxix, No. 7; abstr., The Journal A. M. A., March 22, 1913, p. 949.

[14] Von Koranyi, A., and Tedesko, F.: Benzol in Treatment of Leukemia, Wien. klin. Wchnschr., 1913, xxvi, No. 4; abstr., The Journal A. M. A., March 13, 1913, p. 707.

[15] Quadrone, C., and Buzzano, C. U.: Benzol in Leukemia, Riforma Med., 1913, xxix, Nos. 42 and 43; abstr., The Journal A. M. A., Dec. 13, 1913, p. 2202.

[16] Klemperer, G., and Hirschfeld, H.: Therap. d. Gegenw.; 1913, liv, No. 2; abstr., The Journal A. M. A., March 15, 1913, p. 872.

[17] Jespersen, K.: Fatal Result Following Benzol Treatment of Leukemia, Deutsch. med. Wchnschr., 1913, xxxix, 1300; abstr., Am Jour. Med. Sc., November, 1913, p. 766.

[18] Neumann, W.: Benzol in Treatment of Leukemia, Therap. d. Gegenw., 1913, liv, No. 2; abstr., The Journal A. M. A., March 15, 1913, p. 872.

One may cite a warning from Meyers and Jenkins[19] of Albany, who remark that its institution is so recent and clinical experience still so scanty that definite conclusions as to its intrinsic value should be held in abeyance. They comment on a lack of uniformity in action, a fact which hitherto has not been emphasized, so far as I have seen.

In all cases it reduces white cells, but in some, apparently those with very high counts, it does not reduce the leukocytes to normal; while in cases of from 100,000 to 200,000 it may give brilliant results with normal white counts, greatly diminished or normal spleen, distinct gain in weight and strength, and loss of fever. On the other hand, there may be paradoxical reactions, with falling white counts and gain of strength, with no change in the spleen; we may find a decrease of the spleen with a persisting high leukocyte count, or there may be sudden leaps in the number of white cells. They suggest, therefore, that the effect of benzol be carefully checked by daily blood examinations so as to gage the optimum dose and to forestall any symptoms of benzol poisoning.

I need refer to the chemistry of this drug simply to call attention to the fact that benzol is benzene, not benzine; its formula is C_6H_6. It is a product of the fractional distillation of coal-tar, while benzine is a product not of coal-tar, but of crude petroleum. It is also necessary to say that the benzol of internal medication should be chemically pure, as the commercial product contains in addition variable quantities of toluol, xylol and other foreign admixtures.[1]

Its toxicology so far as I know has not been completely worked up, except with reference to Dr. Barker's cases at Johns Hopkins, in which evidences of grave toxemia, of purpura and of a progressive increase of anemia and leukopenia were the signs. The only reports of cases coming to necropsy after the clinical use of the drug, so far found, are from Mühlmann:[20] In a case of lymphatic leukemia, a total of 175 gm. of benzol was given in six months, with marked improvement, so that the chemical was suspended after two weeks; this was followed by an increase in the leukocytes, again reduced by benzol, again to rise, with death following; at necropsy, extensive necrosis of the liver-cells was found. In the same abstract from which this report is taken it is said that Neumann has reported similar findings of necrosis of the liver in a case of myeloid leukemia after benzol, and that Pappenheim found the same necrosis in the livers of rabbits given benzol. Such experience, though limited to two clinical cases of the number already reported, points to the wisdom of keeping as close supervision over the functions of the liver as we are permitted during a course of benzol treatment. Aside from these signs of injury to the blood and blood-making tissues, and to the liver, one would naturally expect to have evidences of gastro-intestinal irritation, as well as of renal injury; and it is in these general directions, as well as through constant watch over the blood-changes, that I have gaged the gradual increase of dosage, so far without known deleterious action in any way.

This leads to the further remark that there seems to be no definite dosage of the drug. Koranyi begins with a dose of 0.5 gm. three or four times daily, combining it with an equal quantity of olive-oil, dropped immediately before administration into capsules. With this start it seems that the dose is gradually increased, according to the temerity of the individual observer, until some effect is noted on the blood-picture; several of them adding the precaution that at the time a decided drop in the total count is noted, it would be better for the dose to be held stationary, decreased, or the drug stopped altogether for the time being, for fear that too severe a destructive action on the blood-forming tissues might be realized. It seems to follow, therefore, that its administration cannot be carried out safely, for the dose cannot be gaged otherwise than with constant recourse to blood examinations.

It should be noted further that in most of the reports at present available, the use of benzol seems to have been preceded for a longer or shorter time by the Roentgen ray; lately, it seems, because in some way the preliminary use of the rays beneficially prepare the soil for the subsequent use of benzol. So, except by inference, it is hard to measure the part played by the benzol in the good result, with the proviso that in almost each case the Roentgen ray alone had failed to do any striking good. It is then an added duty to place on record two cases under my observation in which the Roentgen rays had never been used.

Case 1.—*Splenomyclogenous leukemia.*

History.—A boy, aged 13, was first seen Aug. 18, 1913, complaining of abdominal swelling, to the family's best knowledge of only a week's duration, and referred through the kindness of Dr. George A. Wright of Chilhowie, Va. The family history has no interest at present. Until four years ago the patient had enjoyed good health, when an attack of "bronchitis" came on, lasting some while: since then there had been no definite illness, but the patient has never been robust. He had had no infectious disease except measles and whooping-cough. For some months past he had had headaches nearly every day until two or three weeks ago, since when there had been none of moment. There had been no prolonged cough since recovery from bronchitis; recently there had been pain across the lower front of the chest. In all other respects the past history was negative. The boy has followed the pursuits common to boys of his age, with the exception that for the past several months his play has been less vigorous, and he has had to rest oftener. About the middle of last June he fell from a fence on his back; for an hour or so he suffered with his back; it hurt him to straighten up, but he could get around; later the same day there was a pain in the chest and it hurt to breathe; this passed off within an hour; afterward he knew of no ill consequences from this fall. He resumed his usual mode of life until two weeks ago, when he became unusually "puny," and ached all over; the ache was worst in the head, but he was still going about, though tiring easily. One week later, that is, one week before admission, abdominal enlargement was first noted. Up to that time nothing wrong had been detected in the abdomen. When discovered the swelling of the abdomen was said to have been as prominent on one side as the other, but with only about half as much enlargement as at this time. With this exception he feels now as well as at any time for the past several months.

Examination.—This was negative, with the following notable exceptions: Normal development, but moderate emaciation, the size of the abdomen in striking contrast. Mucosa pale, without cyanosis; a lemon-yellow pallor; scattered areas of pigmentation. Lower eyelids slightly puffed. Tonsils slightly enlarged. Lymphatics palpable but not appreciably enlarged. Pulse regular, 104 to the minute, blood-pressure 104 mm. Temperature at 3 p. m., 100.5. Heart's apex displaced into the fourth space, well up toward the left armpit, evidently by being crowded up from below. Marked precordial pulsation; otherwise negative. Superficial veins over anterior chest enlarged and prominent. Breathing upper thoracic. Cardiac dulness begins at second rib, liver dulness at fifth rib; below which lines cardiac, splenic and hepatic dulness and flatness fill the remainder of the thoracic cavity; and in the backs, dulness and flatness from the lower angles of the scapulae. Abdomen markedly distended, asymmetrical, larger swelling on the left side. A tumor occupying almost the entire abdomen, leaving free only a small portion of the right flank, a small crescent underlying the right subcostal margin, and another small area across the lower abdomen: the edge easily felt, sharp and firm, a notch or two as of the spleen; the tumor itself smooth, slightly tender, its greatest prominence in the left lower quadrant, continuing up to be lost under the left costal border. The liver is apparently not enlarged downward at this time. Leukocytes: 372,000 per cubic millimeter. An accurate differential seemed impossible: many myelocytes, eosinophils and polymorphonuclear elements. Red cells largely overshadowed by the leukocytes, but apparently show negligible abnormality. No nucleated reds seen. Hemoglobin (Sahli), 55 per cent., red blood-cells, 3,072,000 per cubic millimeter.

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[19] Meyers, Jerome, and Jenkins, Thomas: Benzol in Treatment of Leukemia, read before Med. Soc. State of New York; abstr., The Journal A. M. A., May 17, 1913, p. 1575.

[20] Mühlmann: Deutsch. med. Wchnschr., 1913, xxxix, No. 43; abstr., The Journal A. M. A., Nov. 29, 1913, p. 2022.

Treatment was delayed until August 23, after which date it has been faithfully followed, as will be noted from Table 1. The hemoglobin has hardly varied from the time of beginning treatment until benzol was suspended, in spite of which the boy's color showed splendid improvement. The red blood-cells persisted at about the same level of moderate anemia, until the count a month after beginning treatment, when they had jumped up 2½ million, to above the normal line. The urine has never given serious concern; only once has a mere trace of albumin been recorded, and twice a rare cast. As the output of urine held constant, and there were no symptoms of ill health, we have regarded the kidneys as being normal for the condition of leukemia, in which copious output of the amorphous urates and of more or less albumin and casts are frequent findings. Only once has there been any intestinal upset, a day of diarrhea, which cleared up without trouble after a dose of oil.

Our principal concern is naturally with the white cells. A number of reports indicate that at the beginning of treatment these may rise, and so they did in this case, reaching the mark of 499,000 cells within a

TABLE 1.—COURSE OF SPLENOMYELOGENOUS LEUKEMIA IN CASE 1

Date 1913	Hgb. Per Cent.	R.B.C.	W.B.C.	Differential*	Spleen	Urine	Dose Drops	Remarks
8/18	55	3,072,000	372,000	Many myelocytes and eosinophils; no blasts	Four-fifths of cavity	Opaque; 1.020 no alb. or casts	....	First examination.
8/23	..	....	......	....	Same	....	5	Treatment started.
8/25	..	....	499,000	....	....	Same	7.5	....
8/28	..	....	452,000	....	Slight change	....	10	....
8/30	..	....	404 000	....	....	....	12	Allowed to visit home.
9/ 1	52	3,172,000	428,000	....	....	....	15	Girth 28½ inches; return to hospital.
9/ 4	..	....	358,500	....	....	....	17	Can button trousers.
9/ 8	..	....	398,000	....	....	....	20	After visit home; put to bed 2 hours a. m. and p. m.
9/13	..	....	349,000	....	....	....	20	....
9/16	53	3,180,000	373,000	....	....	....	22	....
9/19	..	....	185,000	....	Diminish	....	22	....
9/24	..	....	122,000	Myeloc. fewer; eosinop. same; no blasts	....	1.023; occasional hyaline cast & w.b.c.; no albumin	22	....
9/26	..	....	......	....	....	1.021; no alb., cast or w.b.c.: full of urates	None	Day of diarrhea; castor oil.
9/27	..	....	128,000	....	....	....	24	At home one week.
10/ 4	..	....	41,000	....	Right abdomen clear	1.022; alb. s.v.t., occasion, w.b.c., no casts	24	Returned to hospital each week for observation.
10/11	..	....	10,600	....	Left side 1½ ins. below navel	Rare cast, occas. w.b.c., moderate urates	20	....
10/18	..	....	6,600	....	Barely to be felt. left costal margin	....	None	....
10/25	..	5,608,000	8,400	Few myeloc. and eosinophil.	1 inch below ribs	....	10	....
11/ 1	67	5,888,000	9,750	....	Same	....	12	....
11/ 8	60	5,608,000	9,000	P., 71%; S., 18%; L. & T., ?%; My., 4%; Mz., 3%; E 1%.	Rib-margin	1.014; cloudy; heavy phosphates	None	Blaud's, t.i.d.
11/15	..	....	10,800	....	1½ inches below ribs	....	None	Blaud's, t.i.d.
11/21	..	....	10,900	....	Same	....	None	Blaud's, t.i.d.
11/29	..	....	11,800	....	Same	....	None	Cold several days.
12/ 6	..	....	9,600	P., 76%; S., 18%; L. & T., 1%; E., 1%; Mz. (?), 2%; My. (?), 2%	½ inch above level navel	....	None	Blaud's continued.
12/20	..	....	10,400	....	1 inch below level of ribs	....	None	Just recovering from attack of mumps of 2 weeks' duration.

*P., polymorphonuclears; S., small mononuclears; L. & T., large mononuclears and transitionals; My., myelocytes; Mz., mast-cells; E., eosinophils.

day or so after beginning treatment. From this time there was a very slow and gradual drop, with occasional flare-ups, for four weeks, when, within three days, the count was cut in half, namely, a drop from 373,000 to 185,000. During this time the dose of benzol had been 22 drops three times daily, or approximately 4 gm. daily. Ten days later the count had dropped to 41,000: the patient had lost two-thirds of the cells he had ten days before, and had less than one-tenth of the number with which he began five and one-half weeks before. Two weeks later still, the count was 6,600; that is, seven and one-half weeks after beginning with a count of approximately 400,000, he had a leukopenia. At this date benzol was suspended, but given for two weeks a little later when they rose again to 9,750. Since then the patient has had no benzol (two months), the counts varying between 9,600 and 11,800, the latter count being coincident with an acute cold of several days' standing.

I should especially like to call attention to one point: we noted that each one of the flare-ups recorded in the patient's early history under benzol followed visits to his home, and promptly subsided after coming back to the hospital; and, still more positively, the great drop came after we had instituted the plan of putting the patient to bed for two hours each forenoon and afternoon. In a word, we believe now that we shall put the next patient to bed during the early stages of treatment, at least, and we shall expect faster and more steady improvement, other things begin equal.

No definite differential count was made until late in treatment. It was noted, however, from time to time, that the numbers of myelocytes and eosinophils were lessening; until November 8, the count of 71 per cent. polymorphonuclears, 18 per cent. small mononuclears, 3 per cent. large mononuclears, 4 per cent. myelocytes and 3 per cent. mast-cells with 1 per cent. eosinophils was recorded, and great difficulty was encountered in classifying the cells, probably because of degeneration. With the later counts the same difficulty persisted, in which it was thought, however, that 2 per cent. of the cells were definitely myelocytes. One notes with dissatisfaction the continued presence of this abnormal cell, in spite of general improvement; and this reminds us that Wachtel comments on the same persistence of the abnormal cell in one of his cases — the leukemia must still be active.

The spleen, coincident with the lessening of the leukocytes to the normal, showed a progressive shrinking, until at the time that the leukocyte count was 6,600, it was no longer palpable. It might be mentioned that before any positive differences in size could be observed, there was a very marked difference in the "feel" of the organ, it being much softer, and its edges harder to identify; the boy himself remarked that he knew it was smaller because he could now button his trousers about his waist. Since the suspension of benzol the size of the spleen has fluctuated, being noted as at the costal margin to within 1 inch of the level of the navel, and reminding us of Jenkins and Meyers' observation, not always lowest when the count was highest; the count was lowest when the spleen was largest, in this post-benzol course. At the last observation it was 1 inch below the rib-margin.

A final point might be of interest: While the disease was most active, the patient's temperature ranged each day from 97.6 to about 101, with occasional rises as high as 102.5. With the drop in leukocytes came a drop in temperature, its range being practically normal, except with the complications of cold and mumps, since October 4.

Koranyi is authority for the statement that the lymph-nodes seem to be less influenced by benzol therapy, and Selling's experiments seem to confirm this view, which, if correct, would lead one to expect little influence in the lymphatic type. Klein, however, was unable to detect any difference in the effect between the various forms of leukemia. With this encouragement, and because no other available treatment has had the least influence, and also because of its remarkable effect in the first case, I was tempted to use it in the second, which has already been reported.[21]

CASE 2.—*Lymphatic leukemia.*

History.—A colored man, aged 56, laborer, patient of Dr. G. V. Litchfield, Abingdon, Va., came under observation March 18, 1912, complaining of painful swelling of the right leg. His family history is unknown. He has enjoyed good health in the past. He had "chills and fever" as a boy in Alabama, with no return, and tonsillitis two years ago; the history otherwise was clear. He denies absolutely any venereal infection, though he says that he is the father of thirteen children, only two of whom are living, the eleven dying at ages from 6 months to 8 years of various diseases; none were still-born, and his wife has had no miscarriages. His average weight is from 165 to 170; he weighs to-day 168. He says that he was perfectly well four months ago, when suddenly a pain struck him behind the right hip radiating down the inner side of the thigh to the knee; he continued his work as an ordinary laborer, could hardly get home at night on account of the painful leg, and has not been able to work since for that reason only. Twelve hours after the onset of pain he first noticed "kernels" in the right groin, and about the same time swelling began in the thigh and has been increasing gradually since. Four weeks later he noticed enlargement of glands everywhere. Otherwise he feels perfectly well.

Examination.—The general lymphatic enlargement of lymphatic leukemia is revealed, with enlargement also of liver and spleen, the greatest swelling being of glands of right groin, which has apparently dammed off the lymphatic circulation of the right leg, producing a hard brawny swelling of that extremity, analogous to elephantiasis. The leukocyte count was 400,000, of which the small mononuclears averaged 96.5 per cent.

Treatment and Course.—Since March, 1912, the patient has been taking arsenic and other indicated treatment at irregular times, until Sept. 22, 1913, when at my request Dr. Litchfield referred him back to us for a trial of benzol therapy. At this time he says that he is about in the same condition as before except that the leg and the scrotum are more swelled and swelling is beginning to appear in the other leg. The legs and lymphatics are even more enlarged and brawny than on last examination. The right leg is in a condition of extreme elephantiasis evidently from lymph stasis; the left leg is fast becoming in the same condition from the same cause, and the penis and scrotum are also much enlarged.

The white cells on this date were 1,059,000, and after a search of the whole slide only 2 polymorphonuclears and 2 eosinophils could be found.

Passing over many remarkable features of this case, one notes a jump (Table 2) from 400,000 to over 1,000,000 white cells within one and one-half years, of which about 98 per cent. are small lymphocytes; a pure case of lymphatic leukemia.

Aside from a comparatively small drop to 730,000 and 708,000 cells within a few weeks of treatment with benzol, which counts are quite questionable, being made by another who acknowledges possible error in handling the figures, there has been no improvement in the blood-picture worth noting since; the counts later ranging from 956,000 to 1,200,000 even on 35 drops of benzol three times daily, treatment having been continued three months. The patient says that the flexibility of the legs is increased, but it is hard to see how, as their "feel", and appearance have not shown any marked change.

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[21] Smith, F. H.: Case of Lymphatic Leukemia, Old Dominion Jour. Med. and Surg., 1912, xiv, 371.

So far we have not noted any toxic manifestations, but are ready to discontinue treatment because it has been ineffectual. Certainly our experience is against Klein's; we can see no benefit at all in this single case of lymphatic leukemia from the use of benzol, though, of course, having nothing better to offer, we should feel tempted to try it another time.

Our attitude toward the drug in the myeloid type is altogether different.

TABLE 2.—COURSE OF LYMPHATIC LEUKEMIA IN CASE 2

Date 1912	Hgb. Per Cent.	R.B.C.	W.B.C.	Differential	Glands	Urine	Dose Drops
3/18	77	3,600,000	400,000	P., 1%; S., 94%; L., 5%; E., 0%.	All large and hard	....	....
3/27	..	....	479,600	S., 98.1%	....	....	....
1913 9/22	..	....	1,059,000	2P. and 2L. and 2E. to slide	Tremendous groups of glands; elephantiasis right leg and scrotum	....	20
10/ 6	..	....	730,680	....	No commensurate clinical change; count faulty (?)	....	20
10/13	..	....	708,000	....	....	....	....
10/27	..	....	973,000	No change	Softer	....	25
11/ 3	..	....	1,088,000	....	Softer; legs more flexible	....	30
11/16	..	....	956,000	No change	Inguinal glands softer; knee flexes better	....	35
11/24	..	....	1,214,000	....	....	Amber; clear; sl. floc. sed.; acid; 1.019; alb., neg.; urobilinogen 0; microscopic, 0	35
12/ 2	..	....	998,000	....	....	....	....
12/ 9	..	....	968,000	....	Feels well. no toxic symptoms; flexion better.	Normal	None
12/22	..	....	1,096,000	....	Shortness of breath (diurnal and nocturnal); digitalis.	....	None

Summarizing our impressions here, there can be no doubt that benzol is a remedy of remarkable potency in myeloid leukemia. My own case confirms this favorable impression: benzol accomplished feats hitherto undreamed of in the rapid subsidence of signs and symptoms in a fatal disease.

Beyond a doubt also it is a two-edged sword, as Billings says, and he who uses it without bearing in mind its grave possibilities is running a serious risk of substituting for one disease a still more fatal one.

At the risk of too great length, I cannot pass this point without emphasis. Already the late articles assume significant tones. Barker and Gibbes,[22] for instance, evidently share the belief of the many as to the efficiency of the drug, but they take pains, as it were, to emphasize, among other points, the fact that benzol does possess dangerous toxic properties, wherefore their suggestion that its use for the present be limited to hospital patients, that the drug may be given a fair trial and not be allowed to fall into undeserved disrepute. Kiralyfi, in his latest article,[9] seems to be prompted by the same desire to warn of its dangerous side. He adds a case similar to those of Jespersen and Neumann, of death after uncontrollable nosebleed and a drop of leukocytes to 460, and unhesitatingly states that this death was due to the continuance of the action of benzol pushed too far. Hence his advice as to caution, to stop the benzol when the leukocytes have dropped to 25,000.

I believe, therefore, that granting even a specific action, it can hardly become a popular remedy, because its dosage, etc., must be gaged by frequent examinations of fresh blood.

After all, we have no proof yet that benzol is specific. So long as myelocytes exist, leukemia must still be active. It is significant that not one clinician has yet expressed *himself with reference to the future of these* patients. Are we to believe, as the optimistic reports would tacitly allow us to, that in benzol we have a specific? Or are we to believe that treatment will have to be continued periodically and indefinitely, like thyroid therapy? Or will the time come in many cases when in spite of, if not because of, benzol treatment, the leukemia will return in fulminant form, and the patient rapidly succumb in acute exacerbation? Time alone will reveal.

Hesitating to be the fool to rush in where angels fear to tread, I hazard the guess that within the next six months the journals will contain numerous reports of recrudescences of the disease after benzol suspension. It is a remarkable remedy, spectacular in its effects, deserving of the utmost respect as well as caution in its administration, yet, I fear, not a specific.

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[22] Barker, L. F., and Gibbes, J. H.: Treatment of Leukemia with Benzol, Bull. Johns Hopkins Hosp., 1913, xxiv, No. 274; abstr., THE JOURNAL A. M. A., Dec. 20, 1913, p. 2272.

Early Anesthesia.—We are so accustomed to think that anesthesia was discovered about the middle of the nineteenth century in America that we forget that literature is full of references in Tom Middleton's (seventeenth century) phrase to "the mercies of old surgeons who put their patients to sleep before they cut them." Anesthetics were experimented with almost as zealously during the latter half of the thirteenth century as during the latter half of the nineteenth century. They were probably not as successful as weare, but they did succeed in producing insensibility to pain, otherwise they could never have operated to the extent they did. Moreover, the traditions show that the Da Luccas particularly had invented a method that left very little to be desired in this matter of anesthesia.—Walsh: Makers of Medicine.

CASES OF INSANITY ARISING FROM INHERENT MORAL DEFECTIVENESS

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The conclusions reached in this paper are based on observations made in the psychiatric wards of St. Francis Hospital, in the neurologic service of the Western Pennsylvania Hospital, and in the Juvenile Court of Pittsburgh.

Among writers on mental diseases, there is a lack of uniformity as to precisely what is meant by moral insanity. In this article the term moral insanity is applied to those persons who are irresponsible through an inherent deficiency of moral sense. They fall largely into two classes: those who commit their so-called immoral acts deliberately, and those who commit them on the impulse of the moment. Such irresponsible persons are to be found in every community. They are unmoral rather than immoral; I shall designate them as unmoral.

There is a standard, or average, of morality in any social group, which is recognized and followed in some fashion by the majority of its members. Yet, while the group as a whole adapts itself with fair uniformity to the established moral code, the individuals comprising any complex social organization represent a wide range of appreciation of moral values. There are innumerable gradations of the moral sense, just as there are innumerable gradations of ability in the realm purely of the intelligence. By the morally insane, however, is meant those who evidence no moral feeling whatever, or evidence it in so slight a degree as to make them unfit for free participation in the community life. The moral sense of these persons cannot be developed by education. Their appreciation of a moral world is either inherently lacking or so rudimentary as to place them, like the imbecile from enfeebled intelligence, in the category of the irresponsible. While we differentiate here the moral and the intellectual fields in mental life, deterioration in the one is usually accompanied by more or less deterioration in the other. Yet it is nevertheless true that the capacity of an individual purely on the side of his intelligence and his ability to appreciate moral values may differ in a great degree. It is not an uncommon thing to see a man of high intellectual endowment functioning morally on a low plane. Through the keenness of his intelligence he is able, in spite of his moral transgressions, to maintain, unrestrained, his existence in his community. Tanzi,[1] in speaking of the more intellectual types of unmorals, says:

> The character of these persons, who are incorrigible in their immorality . . . is calm, frigid, slow, reflective, and, in general, rather particular about legality. . . . Their egoism is not a torrent that suddenly overflows and then subsides, but a broad and majestic river that has prudence for an embankment, and goes on its course without disturbance or hindrance. We find among these insensible immoral persons the poisoners, the great swindlers, the promoters of fraudulent enterprises, the political desperadoes who stop at no trickery, except to clothe it skilfully in legality.

Persons who belong to the calculating type of constitutional unmorality, or moral insanity quoted above, do not often reach the alienist. It is the impulsive type that more frequently falls into our hands. Persons of the latter type commit their immoralities, so-called, without deliberation. They are restless, unthinking, driven by the emotional impulse of the moment. Their impulsiveness, restlessness and lack of emotional balance drive them into adventures and indiscretions that almost certainly bring them in the end under the stigma of lunacy, or of criminality. They are likely to fall into drunkenness and to contract venereal diseases. Such persons are to be found in the ranks of the tramps, the prostitutes, the burglars, etc. The anomalous character make-up, however, is the same kind of anomaly that characterizes the colder and more deliberate of the morally insane. There is the same inherent lack of altruistic instincts. These persons seem to have no sense of the necessity for property rights; they cannot see the reasons for honesty. They do not grasp the principles lying back of those rules of conduct which society recognizes as necessary for its preservation. Morally, they are children, unable to understand why they should not take what they want regardless of the other fellow's rights.

The diagnosis in cases of moral insanity is as clear and definite as in any other field of mental derangement. Certain anomalous traits are displayed with unfailing regularity. A careful history, however, covering as much as possible of the patient's life must be obtained. We are dealing here with a congenital anomaly; its manifestations, therefore, exist early, though they often go unheeded.

The following characteristics apply especially to the more impulsive of the morally insane; the cases cited fall within that class. The traits these persons most commonly display early in life are: excessive irritability, stubbornness and outbursts of passion, as well as exceptional selfishness, cruelty and restlessness. Here is found the unmanageable child, often referred to by fond parents as "spoiled." Such children persist in thefts after repeated punishment. They do not outgrow the childish habit of lying. They seem to develop no sense of shame or of self-blame for misdemeanors. They show lack of concentration and inability for sustained attention. Their school life is often irregular, marked by pranks, turbulence and even expulsion. Very early they are attracted to the play side of life. They want gaiety, which later leads them into dissipation.

The age of puberty is of especial moment in these cases; characteristics tend to become more pronounced. What was earlier looked on as mere mischief or perversity is now seen to be of serious import. Improvidence and extravagance become prominent traits. The desire for selfish gratification leads to acts of flagrant dishonesty. Relatives learn to look for missing valuables in the pawn shop. Fathers must stand between forgeries and the law. These persons apparently learn no lesson from experience. They are incorrigible. In spite of repeated punishment they go heedlessly on, committing their offenses again and again.

The first case to be cited presents, in addition to the traits already mentioned as marking the impulsive type of the morally insane, the fairly typical characteristics of popularity and plausibility. This patient showed fine physical development — often the case in these persons. He presented, also, the frequently seen manifestation of pronounced egotism, with aspirations for artistic or literary attainment entirely beyond his capacity, along with the usual inability to see any necessity for preparation or apprenticeship in his chosen art. Such childlike fanciful wishes frequently mark these unmorals, showing their close relationship to certain types of early dementia praecox.

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[1] Tanzi: Mental Diseases Rebman Co., 1909, p. 697.

The patient was referred to me for alcoholism. His friends believed that all his vagaries and transgressions were occasioned by his addiction to alcohol. They thought that if this were overcome he would be transformed into a normal and useful individual; but his conduct, during my first visit, while he was under the influence of liquor, was such that a tentative diagnosis of moral insanity was made — a conclusion which his history, which was obtained later, definitely confirmed. Though not very drunk the patient was entirely without any feeling for the amenities. Though he had lived all his life in an environment of the finest breeding, he showed no sense of shame and no hesitancy about creating a scandalous scene in which his young bride, as well as his father and mother, were exposed to vulgar publicity. In the case of an alcoholic in similar circumstances there would, ordinarily, have glimmered through his intoxication some automatic sense of the proprieties to which he had been accustomed. The patient became violent and obscene and was quieted only on the appearance of a policeman with handcuffs. When this definite and unassailable authority appeared, the patient, like a child that had been spanked and thoroughly conquered, at once pleasantly and even delightedly acquiesced in the plans being made for his removal to a hospital. Having adapted himself to the inevitable state of affairs and feeling himself the center of the stage, he became like a child interested in a new toy. He was the friend of everybody; he would go anywhere, do anything. This cheerful adaptability to the inevitable (such as the unvarying routine of life in an asylum) is typical of the constitutional unmoral; it is not characteristic of the alcoholic, who is the bane of his ward, sulky, restless, never satisfied.

Case 1.—Mr. B., the 30-year-old son of cultured and affluent parents, was referred to me, in January, 1912, for alcoholism. His previous history revealed the anticipated facts. The father, mother, brother, and wife, were seen separately. The statements of each corroborated, even in minute details, those of the others. The patient had been headstrong, "bullheaded," all his life. If he wanted a thing he had always insisted that he must have it, regardless of whether it was advisable, or within his parents' means. He had been sent to school after school but had never studied. He had been popular with his schoolfellows, taking an active part in athletics, often managing teams and clubs. He had been extravagant, always wanting money, and never satisfied with the amount that could be given him, though he had as much as his companions. He would borrow from any one who would lend and seemed to have a knack of getting money from nearly every one he approached. He would pawn his jewelry and that of his relatives. He has been drinking since a boy. His family has never been able to depend on a word he says. He never kept up enough sustained effort to finish any given work, but was always changing from one thing to another. He has aspirations for literary and artistic success, which have been encouraged by his father, though the latter said that his son would not go through the drudgery necessary to acquire technical ability; and that his literary productions are worthless. Efforts have been made to establish the patient in various kinds of business; but the only money he ever earned was a few weeks' salary while kept in an office through his father's influence. He squandered a fortune abroad while presumably engaged at his art studies. Since the patient came under my care the father bought for him an expensive villa, fitting up a luxurious studio. In two months the latter tired of it, as if it had been an outworn toy, his dissipations meanwhile being as marked as ever. He then took various "cures" and was finally taken to the country, where he has since been living.

The fact is to be noted that in the preceding case, as well as the following one, the patient grew up in the best of home surroundings, side by side with a brother who, in each instance, developed into a normal average man. Environment, therefore, cannot be held responsible for the anomalous character development of these two persons.

Case 2.—Mrs. S., aged 31, came into my service in June, 1913. Her heredity was bad, especially on her father's side, in whose family tuberculosis and alcoholism were pronounced, though neither was present in her father. Her mother, a very refined woman, died of cancer; her only sister, of epilepsy. A history was given of restlessness and sleeplessness during infancy, which lasted until her sixth year. As a child, she was of a nervous, impulsive, self-willed temperament, easily distracted from the duty in hand.

At puberty these characteristics became more pronounced: and a tic, or jerking of the head, developed. A neurologist was at this time consulted. Her distractibility increased; she took no care to keep appointments; she became more wayward and self-willed, insisting on her own way regardless of the convenience or rights of others. She was educated by private tutors until she was 15. She never studied—"got along somehow." Arithmetic was impossible to her. She was then sent to a boarding-school, where she was very popular, though she often got into trouble with her teachers, but was usually able to "fix it up with them." She was cunning, plausible, an inveterate liar; extravagant, spending money with the wildest foolishness. She would run up enormous bills, borrow from everybody and pawn everything available. She was of splendid physique, an unusually handsome girl. At 18 she ran away from school to marry a man of apparently similar mental make-up. Then followed three years of the glittering "play side" of life—poker, drinking, a "good time." Advice and pleading had no effect. Finally her parents took her home. A divorce was obtained, and about six months afterward she remarried. She lived with the second husband two or three years and a child was born. The old dissipations were giddily followed during this time. A separation occurred, and she again returned home, where for two or three months she kept house for her father, being thrifty and contented. Then suddenly she disappeared, and was found three months later in New York living with the man she had divorced. Though in miserable surroundings she was gay and contented. She was again brought home. During the following years numerous attempts were made to keep her, with her father and child, in private boarding-houses; this was impossible owing to her escapades of drinking, etc. From her girlhood she has had a childlike fanciful wish that she wanted to be a nurse—a desire discouraged by her family. But during these years with her father this wish was encouraged in order to give her an interest. She began training at various times in four different hospitals; but never got beyond probation. She began to be arrested repeatedly for drunkenness and disorder. During the year preceding her admission to the hospital, pathologic drunkenness—amnesia, automatisms etc.—became manifest. While in these states she would threaten to kill her father and others, would use foul language and treat her son with great cruelty. Shortly before I saw her she had been held a week in the police station, where, because of family position, she was given considerable liberty. Here she was gay and content, interested in the other inmates, carrying on a flirtation with one of them—a Chinaman. The family was at last willing to admit that there might be "something the matter with her." She was sent to the psychopathic side of the hospital, where she was kept for three months under the best possible conditions. At the end of this time the family, still hoping that she might make good, took her out. She soon went to a neighboring town, where her riotous conduct resulted in much newspaper publicity and in her final commitment to the hospital. She talks now and then of being done with the old life, of having turned over a new leaf; but the superficiality of such assertions is shown by the fact that the next moment she will gleefully relate some disreputable orgy in which she has had a part.

As to prognosis in moral insanity, it may be said that the only solution lies in a controlled environment. It must be kept in mind that the condition is due to inherent moral defectiveness and is incurable. The matter then becomes a question of such disposition of the patient as shall enable him to carry on his life at his maximum of happiness and usefulness. The solution of this question lies in controlling the environment. In cases in which the family can be made to see that the patient will always be unable to meet the demands and complexities of the life about him, that his liberties must be restricted; and when they have the means to command a simple and healthful environment for him away from the seductions and glitter of the city, it is then possible to place the patient in conditions that will enable him to maintain a fairly happy and somewhat useful life. It is not a difficult matter to maintain an appropriate environment for these persons if those in control understand their mental make-up; for these subjects readily adapt themselves to established conditions. Patient 1 is now living quietly on a farm, at some distance from the city, where he is under the constant supervision of a wise member of his family. He is happy, interested and entertained by the simple things about him. Here he shows no particular longing for a different kind of life; but in the several times when he has returned to his former environment he has immediately fallen a victim to the old lures. When it is not possible to command such fortunate conditions, the solution lies in the farm or custodial colony, where the unmoral individual, given proper occupation, will follow a happy and even useful life. When neither of these conditions is available, the insane asylum is the poor alternative. Patient 2 has been in a hospital for the insane for six months. With the exception of two or three episodes of minor insubordination, to which she was incited by discontented inmates (the constitutional unmoral is extremely suggestible), she has settled happily into the daily routine.

In differential diagnosis it must not be overlooked that mental aberrations other than moral insanity may present manifestations similar to those enumerated. I wish to call attention to such as are more commonly encountered.

In early dementia praecox the symptoms may at times closely resemble those of moral insanity. In the praecox cases, however, the onset dates more definitely from the age of puberty; but here too, there is often a long train of apparently immoral acts. The motives or mechanisms governing the anomalous conduct in the two conditions, however, are entirely different. In the dementia praecox there is mental conflict (an inability to choose between what seems to him good or bad, whether or not to act) which produces a paralysis of will that brings about the commonly seen cynicism, stolidity and stubbornness which, in reality, is the result of such rapidly changing motives as to render normal conduct impossible. In the mind of the unmoral, on the other hand, there is no real conflict. For his conduct there is but one motive—his desire for self-gratification.

Imbecility may present a syndrome similar to that of constitutional unmorality. But the defectiveness of the imbecile shows itself primarily and predominantly on the side of his intelligence. It may be detected by the Binet and other tests for mentality. The imbecile shows characteristically, muscular and other bodily stigmata of degeneration.

In those atypical cases of epilepsy in which the outbreak manifests itself chiefly in the mental realm (the "psychic equivalent"), the abnormal conduct may be confused with that of the morally insane. In the case of the epileptic, however, the fact can be elicited that the strange or criminal acts have been performed automatically during a state of amnesia, or split-off consciousness. The epileptic is likely to be of an irritable, morose disposition.

A morbid mental condition may accompany certain ductless gland anomalies, among which perverted thyroidism is conspicuous. Such conditions are characterized by irritability, restlessness and marked suggestibility. The conduct determined by such states is at times erroneously taken for that resulting from moral insanity.

We must not, finally, put the label of moral insanity on the inherently normal individual whose upbringing in an environment of poverty and vice has directed his conduct into the same channels as those spontaneously followed by the constitutional unmoral.

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LODGMENT OF A COCKLE-BURR IN THE VESTIBULE OF THE LARYNX

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Dec. 10, 1911, J. S., aged 10, while playing, entered into competition in tossing up and catching cockle-burrs in the mouth. He proved to be very adept, but one large prickly burr pricked his tongue, which caused a quick inhalation, thus drawing the burr into his larynx. He immediately experienced suffocation, aphonia and some pain. His family physician was called, and found the burr beyond the reach of ordinary measures.

When I saw the boy, about eight hours after the accident, the suffocation had somewhat increased. The patient was slightly cyanotic, his pulse weak, and it was scarcely possible for him to make a sound. The pain at this time was slight. He showed all signs of collapse. I tried to make an indirect laryngoscopic examination, but it was impossible, so we made preparations to do a tracheoscopic examination, preparation also having been made for removal after tracheotomy, which seemed almost unavoidable at this time. The patient was given ether anesthesia, and was placed in the recumbent position, with the head held in partial suspension over the end of the table. Suspecting that the burr was lodged in the upper larynx, I used the autoscopic spatula with the Brunings-Kahlar pan electroscope. I found the burr lodged crosswise in the ventricle of the larynx. It was difficult to establish the landmarks, as there was considerable swelling of the false cords, the burr being covered with blood and mucus and filling almost the entire ventricle. The spines and tentacles were partially imbedded in the mucous membrane, because of the spasm of the muscles and swelling. The only aeration afforded was the air that could pass around the burr through the spines, and that was very limited. Finding it in this position and condition, and fearing that trauma might be caused by the removal of it in that position, I endeavored to turn it so that the long axis of the burr would be in the long axis of the larynx. After this, to grasp it with forceps and remove it was a simple matter. The greatest disadvantage under which I was working was the great amount of secretion which is always present when profound anesthesia is used in bronchoscopy; but using the Brunings-Kahlar pan electroscope overcame this, because the light is reflected light and the secretion has no effect on it.

After the burr had been removed and the narcosis had passed off, the patient was placed in the Fowler position and cold compresses applied to the throat. He experienced no discomfort in respiration, and no further trouble. The compresses were taken off on the third day and the patient took semisolid food without difficulty or pain, and on the third day when he was allowed to try to use his vocal cords he could speak in a moderately audible voice. He was allowed to go home on the fourth day; his voice returned gradually and was about normal on the fourteenth day. The family physician reported later that the patient made an uneventful recovery.

APPARATUS FOR PRODUCING ARTIFICIAL PNEUMOTHORAX

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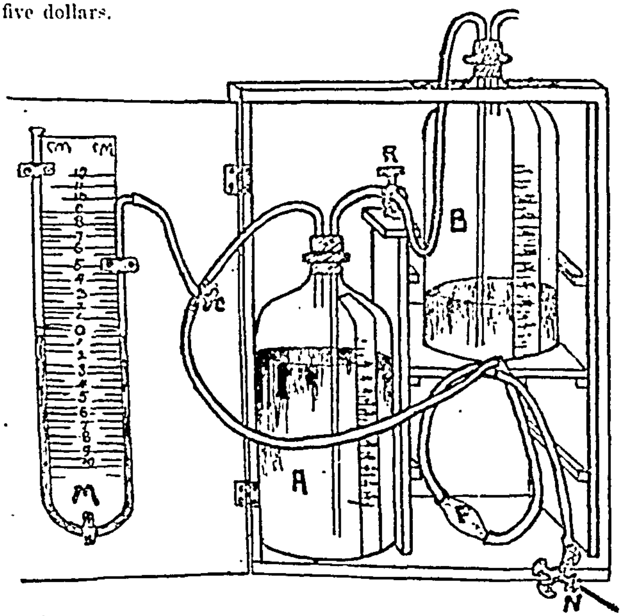
Artificial pneumothorax has been so universally accepted as a therapeutic measure in certain selected cases of pulmonary tuberculosis that the following description of a simple modification of the Floyd-Robinson apparatus as used by us may be useful. It has the great advantage that it can be made by any practitioner who has facilities for bending glass: without the needles the whole apparatus should not cost over five dollars.



Apparatus for producing artificial pneumothorax: *A* and *B*, two 80-ounce bottles; *R*, ordinary stop-cock; *C*, three-way stop-cock; *M*, manometer; *F*, filter; *N*, needle.

It consists of two 80-ounce bottles *A* and *B*, with pierced rubber corks. These bottles are graduated into spaces of 50 c.c. on a strip of adhesive pasted on them. The graduation must be done by measuring 50 c.c. in a graduate for each space. The bottles are connected by a syphon consisting of a glass tube going to within an inch of the bottom of each bottle and connected by rubber tubing. A stop-cock, *R*, is inserted into the rubber tubing between the bottles.

Bottle *A*, which is charged with nitrogen gas, in a manner to be described, is connected by rubber tubing with the needle, *N*, which is inserted into the chest. The water manometer, *M*, which is most important, is connected with the needle by a three-way stop-cock at *C*. This three-way stop-cock by a half turn can be connected either with the manometer or with the nitrogen bottle, *A*. The manometer is graduated in centimeters and fastened to the door of the apparatus by brass-clips. At *F* is a glass filter made by drawing out an ordinary test-tube so that rubber tubing can be slipped over the ends. It is filled with sterile cotton and serves to filter out any foreign particles or droplets that might be carried into the rubber tubing by the gas. The needle used is the Floyd-Robinson type as described by them (Robinson, Samuel, and Floyd, Cleveland: Artificial Pneumothorax as a Treatment of Pulmonary Tuberculosis, *Arch. Int. Med.*, April, 1912, p. 452).

To charge Bottle *A* with nitrogen a cylinder of compressed gas may be used, or it may be charged more cheaply and quite as satisfactorily by abstracting the oxygen from the air by a solution of pyrogallol and potassium hydroxid.

The formula which we have used is as follows: Six gm. of pyrogallol powder are placed in the graduated bottle, *A*, which is then filled to the 450 c.c. mark with warm water and to the 500 c.c. mark with 15 per cent. potassium hydroxid solution. The bottle is corked tightly, shaken and set aside for three hours, at the end of which time practically all the oxygen will be abstracted from air within the bottle. The quantity absorbed can be measured by the amount of fluid that syphons over from Bottle *B*.

To operate the apparatus Bottle *B* is filled with water or pyrogallol solution. To force nitrogen through the needle the stop-cock between the bottles and also the three-way cock at *C* are opened. Fluid from *B* as it gradually syphons into *A* will force nitrogen gas through the tubing to needle. As the fluid falls in *B* the pressure can be maintained by raising the bottle on the movable shelf. The amount displaced can be read easily on either scale, and the flow of gas can be stopped by turning either stop-cock.

When the needle is inserted in the chest the stop-cock, *C*, is turned so as to connect the needle with the water manometer. During the operation the fluctuation and pressure in the manometer can be observed by simply turning the three-way cock, *C*. This closes off the gas and connects the needle with the manometer instantly. This we consider a simple but important improvement on any other apparatus which we have seen described.

The technic of the operation has been so carefully described by numerous writers that it is not necessary to detail it here. (An extended bibliography was given in The Journal, Dec. 27, 1913, p. 2313.) The point which all emphasize is the importance of getting negative fluctuations in the manometer before starting to inject any gas, and observing the effect of the injection of gas on the fluctuations in the manometer. By turning the three-way stop-cock *C* this can be seen instantly at any stage of the operation. If it is considered necessary to warm the gas before injection, a copper coil can be inserted into the rubber tubing and placed in a basin of warm water.

We have given over forty injections with this apparatus and find that it works admirably.

The box can be made by any carpenter. The following articles are necessary:

Two 80-ounce bottles with perforated rubber corks.
One yard of stethoscope rubber tubing.
Adhesive.
One 30-c.c. test-tube to make filter.
One hard rubber stop-cock from ordinary fountain syringe.
One three-way stop-cock; this costs less than one dollar at any instrument dealer's.
One length of ⅜-inch glass tubing.
One length ½-inch glass tubing.
One Floyd-Robinson needle.

WALL OF THE STOMACH PERFORATED BY A PENCIL

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Patient.—Mrs. F. A. was admitted to the Georgia State Sanitarium Jan. 18, 1900, with diagnosis of dementia praecox. No suicidal attempts were noted, but one of the older nurses informed me that some years ago, patient swallowed a thimble, which was recovered in the feces following a purge with castor oil.

Present Illness.—Patient was first seen at 11 a. m., Nov. 18, 1913. Temperature 101⅖ F.; pulse 95. She complained of intense abdominal pain and only reported her condition to the nurse when the pain became so severe that she could no longer stand it. The pain was so exquisite and the abdomen so rigid that nothing could be ascertained from palpation. She was immediately transferred to the surgical ward. A blood-count revealed the presence of 25,000 leukocytes.

Operation.—At 4:30 p. m. an incision was made 4 inches long in the median line between the symphysis and the umbilicus. Nothing was found in the pelvis or lower abdomen to account for the trouble, and the hand was introduced into the incision to explore the region of the gall-bladder and stomach. A foreign object was discovered within the stomach, which proved to be a pencil, the pointed end of which had perforated the anterior wall of the stomach near the cardiac orifice. At the point of perforation, the stomach was adherent to the anterior abdominal wall. On manipulation the adhesions gave way and with the fingers holding the stomach tightly around the perforation, the pointed end of the pencil was brought into the incision. The pencil was immediately withdrawn, the stomach held in the abdominal wound by means of sponge forceps and the hole in the stomach carefully walled off with dry sponges, very little, if any, leakage occurring. The perforation was closed with linen (Czerny's) sutures, reinforced with two layers of Lembert sutures. The mass of adhesions, which was semigangrenous, was wiped off thoroughly with dry sponges and cauterized with phenol (carbolic acid) followed with alcohol. Two cigarette drains were left extending to the point of perforation and the abdomen was closed in layers.

Postoperative Treatment and History.—The patient was kept in Fowler's position and proctoclysis kept up for twelve hours; nothing was given by mouth except a little water. November 21, a gastric fistula was seen to have been established and the drainage-tubes were removed. The fistula discharged freely and closed spontaneously about the tenth day after it was discovered. The patient's recovery was uneventful, except that the lower superficial area of the wound became slightly infected and closed by granulation.

The interesting factors in this case are the acute abdominal pain while the pencil was perforating the stomach, the fact that the pencil had remained in the stomach for a considerable period of time without giving rise to symptoms, and the importance of thoroughly exploring the stomach and intestines when an abdominal operation is performed on insane patients.

The pencil was 6½ inches long, the graphite had been entirely dissolved by the stomach juices, and the two halves separated easily while the pencil was being examined.

The patient at first positively refused to tell when she swallowed the pencil, but some weeks after the operation, she told one of the nurses that it occurred several years ago. Little credence, however, can be placed in her statement, as she is markedly deteriorated.

A CASE OF MICROCOCCUS TETRAGENUS SEPTICEMIA [*]

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History.—Joseph G., aged 24, teamster, born in Italy, was admitted to the East Surgical Service of the Massachusetts General Hospital, in charge of Dr. F. G. Balch, Aug. 20, 1913.

The history was difficult to obtain, but it was learned from friends that the present illness came on nine weeks before entrance. Ten days previously the patient had pain in the right shoulder and left hip. About this time, a swelling was noticed in the upper outer aspect of the left leg. At present he has abdominal, chest and joint pains.

Physical Examination.—This shows a well-developed but poorly nourished, very sick Italian. He has lost much subcutaneous fat; the skin is hot, dry and flabby, the mucous membranes pale. There is no mastoid nor lateral sinus tenderness; no stiffness of the neck; no nasal or aural discharge. Pupils are equal and react normally. There are several small palpable axillary glands.

The heart apex is visible in the fifth interspace, 1 cm. inside the nipple line. There is cardiac dulness 12 cm. to left of the midsternum, 2 cm. outside the nipple line. The heart-sounds are rapid, regular and of fair quality. A soft systolic murmur is heard at the apex of the heart. The pulmonic second sound is louder than the aortic.

There is dulness at the right base of the lung, diminished bronchial breathing and many fine moist râles. Otherwise the lungs show nothing abnormal.

The abdomen is distended; it is tympanitic except in the flanks, where there is shifting dulness. The liver dulness extends from the sixth rib to the costal margin. The spleen and kidneys are not felt.

Over the left great trochanter and extending up to the left flank is a large tense fluctuating area. The left leg is generally swollen. There is marked tenderness over the left upper thigh. Over the right midtibial region is a fluctuating tumor, the size of a hen's egg. The right shoulder is slightly swollen and tender, and motion is painful.

The white blood-count is 33,000.

Treatment and Course.—The abscess over the right tibia was opened shortly after entrance by Dr. G. A. Leland, Jr., and considerable pus evacuated. The right shoulder showed marked swelling, but an incision revealed no pus. A small amount of clear fluid was removed from the right chest.

Cultures from the right tibial abscess showed a growth of the *Micrococcus tetragenus.* August 21 an abscess over the left tibial crest was opened and several drams of pus evacuated. Cultures of this abscess also grew the *Micrococcus tetragenus.*

The general condition of the patient did not improve in spite of the drainage of these abscesses, and a septicemic condition was suspected. On September 15, a blood-culture was taken and showed a pure culture of the *Micrococcus tetragenus.* A second blood-culture was taken September 19 to confirm the previous result. This culture also showed the *Micrococcus tetragenus* in pure culture. The patient's condition continued to become worse and he died Sept. 24, 1913, apparently of sepsis and exhaustion.

Unfortunately, necropsy in the case was not permitted, and no further knowledge of the pathologic lesions can be given. Guinea-pig inoculation was, however, used to confirm the pathogenic power of the organism. Ten days after subcutaneous inoculation with growth from the second blood-culture, the guinea-pig showed an abscess of the abdominal wall; a smear from this abscess showed the typical tetrads, both inside and outside the leukocytes. The guinea-pig died fourteen days after inoculation. Culture from the heart-blood of this pig showed a typical *Micrococcus tetragenus* growth. The organism was also demonstrated in microscopic section of the spleen and glomeruli of the kidney.

Thus, there has been demonstrated a pure culture of the *Micrococcus tetragenus* from abscesses and the blood of a patient; the organism has been grown in pure culture; this culture produced lesions in an animal; the organism was recovered from an abscess and the blood of this animal. Typical tetrads have also been seen in cut section of the spleen and kidney of this animal.

The biologic characteristics of the organism isolated were as follows:

Morphology.—Micrococci, growing in tetrads. Stains by Gram's method.

Growth.—Blood-Serum: Moist, glistening, grayish-white elevated colonies.

Agar-Agar: Moist, glistening, grayish-white translucent colonies.

Gelatin: Grows as small irregularly shaped, grayish-white colonies, along the line of puncture, with a circular growth on the surface. Does not liquefy.

Potato: Gray, elevated, moist, irregular shaped colonies.

Litmus-Milk: No change in color.

Bouillon: Clouded. Well-marked slimy growth.

Sugar Reactions.—No acid or gas production in glucose, lactose, saccharose, levulose, mannite or inulin.

The chief interest in this case exists because of the rarity of the condition; the present paper merely adds another case to the list.

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[*] From the Pathological Laboratory of the Massachusetts General Hospital, Dr. J. H. Wright, director.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

CEROLIN.—Cerolin consists of the glycerides of fatty acids along with cholesterins, lecithin and ethereal oil, all of which are found in yeast.

Actions and Uses.—Recent investigations indicate that the laxative action of yeast depends not on the ferments, but on the fatty and lipoid constituents. In skin affections these substances are said to have the same action as yeast itself.

Cerolin is said to be useful in furunculosis, acne, sycosis and similar affections of the skin. It is also said to be useful in habitual constipation, leukorrhea, erosions of the vagina and cervix and similar diseases.

Dosage.—From 0.1 to 0.3 Gm. (1½ to 5 grains) three times a day; children 0.025 to 0.1 Gm. (⅔ to 1½ grains) three times a day.

Manufactured by C. F. Boehringer and Soehne, Waldhof near Mannheim, Germany (Merck and Co., New York). U. S. patent applied for.

Cerolin Pills 1½ *grs.*—Each pill contains cerolin 1½ grains.

Cerolin is a neutral, honey-like semifluid mass of a yellowish to brownish color and a not unpleasant odor of yeast.

It is prepared by extracting fresh purified beer-yeast with alcohol and separating the dissolved fat from the alcoholic extract by suitable means.

If a weighed amount of Cerolin be dried on sand at 102 C. for an hour it should lose not more than 10 per cent. of its weight (moisture).

If cerolin be mixed with sodium carbonate and potassium nitrate and incinerated, the ash dissolved in water, acidified with hydrochloric acid, and the solution saturated with hydrogen sulphide, no precipitate or turbidity should occur (absence of heavy metals).

TETANUS ANTITOXIN (See N. N. R., 1914, p. 243).

E. R. Squibb and Sons, New York.

Refined and Concentrated Tetanus Antitoxin.—Marketed in two packages containing, respectively, 1,500 units (immunizing dose) and 3,000 units (curative dose) put up in syringe containers.

Therapeutics

THE TUBERCULOSIS PROBLEM

(Continued from page 851)

HOW IS THE GERM ACQUIRED?

The discovery of the tubercle bacillus by Robert Koch, in 1882, and the proof that this bacillus was the cause of tuberculosis, changed the established belief that tuberculosis was hereditary to the belief that it must always be acquired. This is of course a most constant fact, but the part that heredity plays in the development of tuberculosis, in furnishing proper ground in which the bacillus may grow, or in offering a condition of low-grade immunity against this disease, is progressively becoming more prominent. A human fetus can be born with tuberculosis, but comparatively few such cases have been recorded. If one were roughly to estimate the number of such authentic instances it might not be far from one hundred, and in most of these the mother was the tuberculous parent.

Tubercle bacilli have rarely been found in the milk of an infected mother. Therefore, direct infection from this source is improbable. It is possible, however, that *toxins from the tubercle bacillus or from a secondary* infection of the mother may be eliminated in the milk and cause, in the child, gastro-intestinal disturbance, fever and emaciation. It is improbable that the milk could furnish any substance that would render the child immune to tuberculosis. The therapeutic conclusion is positive that a tuberculous mother should not nurse her child, not only for the child's sake, but also for her own, as the mother rapidly grows worse through the nutritional loss caused in producing the milk.

That the tendency to develop this disease is inherited seems well established, especially by the carefully estimated insurance statistics. In persons applying for insurance the liability of a person with a family history of tuberculosis to contract the disease is estimated at 30 per cent., and this liability relatively increases with the number of members of the family who have had the disease. There is always a probability that most adults who develop tuberculosis have, as infants and young children, acquired the disease from a tuberculous parent, and have been harboring the germ in some gland or organ of the body.

As one attack of this disease does not cause immunity against subsequent active disturbances from it (in fact, patients having once suffered from the disease apparently are ordinarily more susceptible to it), parents having tuberculosis do not transmit to their children an *immunity*, but *rather a susceptibility*, or an allergy to the disease, as it may be termed.

It would be too far wide of the mark to discuss heredity and hereditary tendencies in this article, or transmitted susceptibility or transmitted immunity (some families seem more or less immune to this disease), but these are all recognized facts.

Statistics show that the person who is underweight and has a family history of tuberculosis is more likely to develop the disease than one who is underweight without a family history of tuberculosis. On the other hand, a person of full weight or overweight, whatever the family history, while not precluded from the possibility of developing tuberculosis, is much less likely to have it than one who is underweight. Also, one who is underweight is more likely to develop tuberculosis than a person of normal weight. Whether or not, the majority of underweight persons harbor tuberculosis germs and such a condition predisposes to underweight has not been demonstrated, but it is quite possible.

As is apparently true of most germ diseases, a race that has but recently acquired the disease is more susceptible to its inroads, and has the disease more actively than a race that has long suffered from it. Also, a change from outdoor life and a dry, clean air environment to indoor or to city life, or to a region where the air is damp or dust laden, predisposes to the development of tuberculosis.

The tubercle bacillus is readily killed by many chemical agents, is destroyed after a few minutes of a boiling heat, and seemingly after a few days of exposure to sunlight. Yet it may retain its vitality and activity when in a dry condition for months, and even when subjected to ordinary weather exposures. It has also been found alive after long burial in the earth.

This germ has been shown to be active when in excessively weak solutions (tuberculous sputum diluted 400,000 times and injected into guinea-pigs will produce the disease); hence there is no good tubercle bacillus except a dead one, and the care taken of any excreta containing them cannot be too great. Not only does the sputum of tuberculous patients *generally contain tubercle bacilli*, but the droplets sprayed by coughing or sneezing frequently contain the germ. A careless patient with pulmonary tuberculosis may not only use infected handkerchiefs, but may spray his clothing and his hands with tubercle-bacilli-infected sputum, and thus reinfect himself, so losing the advantage of the disintegration of the tubercles and the evacuation and ultimate expectoration of the bacilli there contained. A tubercle bacillus when expectorated should never be allowed to reinfect the patient. If such care is exercised, his chances of recovery are increased.

The urine and feces of a tuberculous patient, wherever the focus of tuberculosis may be, are likely to contain tubercle bacilli. In some investigations the urine has been found to contain tubercle bacilli in 50 per cent. of chronic pulmonary tuberculosis cases, and it has been shown by many necropsies that the tubercle bacillus may be found in the urine without any tuberculous lesion of the genito-urinary tract. Some investigations have also shown that tubercle bacilli are almost constantly present in the feces of chronic pulmonary tuberculosis patients.

Fermentation, however, will generally soon kill these bacilli when they leave the body in the urine or feces.

These bacilli almost invariably gain entrance to the system by one of two ways: by inhalation, or by swallowing. A germ that is so constantly present in almost every community of civilized peoples must be breathed and swallowed by most persons. Something in the individual must tend to kill these germs before they acquire a home, that is, before they congregate in sufficient numbers to perpetuate themselves. Nothing probably tends more to prevent the acquirement of this disease than general good health, which especially means health of the upper air-passages and throat, the absence of bronchial catarrh, healthy tonsils, a normal digestion and healthy intestines. The tubercle bacillus probably cannot find a living chance unless there is some disease, injury or chronic disturbance in one of the parts of the body mentioned, and unless a sufficiently large number of them are inhaled or swallowed at once, so as almost to overwhelm the person's ability to destroy the germs. Of course, it is possible and perhaps probable that, although this disease gives no immunity, a patient in whom the disease has been arrested or in whom the disease once active is now chronic or more or less latent, may produce, or have already circulating in the body-fluids, enzymes that may destroy the tubercle bacillus more readily than is possible in one who has never had the disease. This supposition has been somewhat confirmed lately by discovery of the fact that tubercle bacilli injected into the peritoneal cavity of tuberculous guinea-pigs were more rapidly destroyed than they were when injected into the peritoneal cavity of the normal guinea-pig.[1]

Tubercle bacilli have been shown to contain three nucleoproteins which are probably toxic and are at least part of the cause of the systemic poisoning, as shown by fever, sweating and loss of appetite and strength. Besides these substances the tubercle bacillus contains a wax-like fat and a substance like glycogen. It has been shown that the toxic substances of the tubercle bacillus may not be destroyed by pepsin, but may be destroyed by trypsin.

Perhaps many conditions that we have termed causes predisposing to tuberculosis may really *stimulate to activity* latent tuberculosis or a tuberculous focus harbored and concealed somewhere in the patient's body. Whichever of these two suppositions may be correct, we recognize that a patient is likely to acquire, or having acquired, at least may develop an active tuberculous process when he is anemic; when he is under weight; when he is continuously overfatigued; when he has a tendency to recurrent colds, especially to recurrent bronchitis; when he does not quickly recuperate from any simple acute infection, whether it be grip, measles or whooping-cough, etc., or when he has suffered from a more serious acute infection, such as some prolonged septic process or typhoid fever, and especially when he does not recover quickly from a pneumonia or a pleurisy with effusion. Pleuritic effusions are considered as perhaps generally tuberculous in origin. None of the surrounding predisposing causes, such as unsatisfactory housing and occupations that are dangerously dusty, need to be considered here.

A child is considered predisposed to the development of tuberculosis, or perhaps already has a latent tuberculosis, if he is pale, has a tendency to eczemas, or has enlarged tonsils or postnasal adenoids, and especially if he has enlarged cervical glands. Caries of the teeth is also perhaps a predisposing cause, as decayed teeth may harbor all kinds of germs. Therefore to allow caries of a child's first teeth to persist, because they will soon be lost with the eruption of the second teeth, constitutes serious neglect. An enlarged cervical gland probably always shows that an infection entering through the tonsil has invaded the next fortresses of protection, namely, the cervical glands. If the infection is tuberculous, the gland may be actively tuberculous, and evident tuberculous adenitis is the condition. Much more frequent and not evident, but often found by good roentgenograms of the chests of children, is the involvement of the bronchial glands by the tuberculous germ having perhaps first gained entrance through the tonsils, and this without any involvement of the cervical glands. In fact, it has been repeatedly demonstrated that perhaps the majority of children affected with tuberculosis have the initial lesion in the tracheobronchial and hilus glands.

That bovine tuberculosis is frequently transmitted to children through milk by way of the intestine has for some years been thoroughly established, and it has been shown that many instances of glandular tuberculosis are due to this type of bacillus. General tuberculosis rarely, but udder tuberculosis almost always, infects milk with tubercle bacilli. The frequency with which bovine-tuberculosis-infected milk causes tuberculosis in children is still more or less a subject of dispute. Many experiments have shown that the gastric juice does not necessarily, if ever, kill the tubercle bacillus.

Recent investigations by Medin[2] of 623 children who had died of tuberculosis showed that in 98 per cent. infection was primary in the lungs, and in only 2 per cent. were the intestines the primary seat of the lesion. Medin states that during the thirty years in which he has specialized in the diseases of children he has not seen a single case of tuberculosis which he could attribute to infection from milk. On the other hand, many of the tuberculous glands of children are said to be caused by the bovine tubercle bacillus, and there seems to be no question that a tuberculous cow is a menace both from the contamination of her milk and from the spread of infection throughout her pasture and her barn.[3]

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[1] Manwaring, Wilfred H., and Bronfenner, J.: Intraperitoneal Lysis of Tubercle Bacilli, Jour. Exper. Med., 1913, xviii, 601.

[2] Medin: Arch. f. Kinderh., 1913, lx, lxi, 482.

[3] See also Mitchell: Brit. Med. Jour., Jan. 17, 1914.

There is a difference of opinion as to whether or not bovine tubercle bacilli can be distinguished from human tubercle bacilli. It is even stated that there may be varieties between the two supposedly typical forms. Certain it is that the variety termed the bovine variety is rarely found in adults, but is more or less frequently found in children. It is generally agreed that an infection with the bovine bacillus in children may be the origin of pulmonary tuberculosis in later life.

The best method of handling the serious economic problem of the prevention of tuberculosis among cattle need only to be mentioned to show the difficulties involved. It is of little use to test cattle with tuberculin, to destroy those who show a positive reaction, and then to leave the infected barns and cow-sheds to infect healthy cattle. This is a most serious problem for the Eastern states, and to prevent bovine tuberculosis probably means that a large majority of all cow-barns and sheds should be destroyed by fire.

The problem of how a child becomes infected is made more difficult by the assertion of Calmette[4] that it is impossible to tell whether a pulmonary tuberculosis has been caused by the tubercle bacilli being inhaled, or by reaching the lungs through the lymphatics. He believes that the tubercle bacilli are readily absorbed from the intestine and are there taken into the lymph-channels, and later into the general circulation. Tubercle bacilli can pass through the normal intestinal wall, and have been demonstrated in the thoracic duct. From this source they may then reach the blood and glands (most frequently the bronchial), and may be harbored in these glands for years. Such infection most frequently occurs in young children, and in later childhood or early adult life some acute disease or some serious debility, or the disturbances caused by bad ventilation or dusty occupations, can cause these glands to break down and diffuse bacilli through the system.

There seems to be no question that animals may be infected by both human and bovine tubercle bacilli. Human tubercle bacilli, through experiment and by accident, have infected some of the lower animals, notably rabbits and guinea-pigs, and rarely cattle, hogs, goats, sheep and horses. Dogs, cats, chickens and turkeys have tuberculosis; but ducks and geese, although living in the same pens, may not have it. Animal tuberculosis, while similar to human tuberculosis, is not identical. Bovine tubercle bacilli are many times more virulent to inoculated animals than human tubercle bacilli, with possibly the exception of the guinea-pig. Chicken tuberculosis does not harm cows. Fortunately, tuberculous meat is entirely sterilized by thorough cooking.

METHODS OF DISCOVERY OF INCIPIENT AND LATENT TUBERCULOSIS

Parents and schoolteachers should discover whether a child is running down, or is ill; but with adults or young working girls or boys the observation is less constant and less critical; hence the examination of employees for tuberculosis recommended by the Chicago Tuberculosis Institute in 1912, if adopted by all cities, would work wonders in preventing the development and spread of this disease. The Chicago committee having this subject in charge urges the importance of a systematic examination of individual employees in factories, mercantile establishments and offices with the object of detecting cases of incipient tuberculosis. The detection of persons so diseased is of importance not only to the one afflicted, but also to the well who may be working near, and to the employer who loses to a degree the efficiency of his working staff through the incapacitation of the employee.

To accomplish the object desired, namely, the discovery of incipient or latent tuberculosis, the decision as to how far advanced the disease is, and the best treatment advisable for each case, means the cooperation of the employer, the superintendent and foreman, if there be such, a physician and a trained nurse. The Chicago committee's report did not propose to examine all employed persons, as the expense would be too great, but to examine those who were readily recognized by their employers or by their fellow-workmen as showing debility, as coughing, or as being actually ill. Specifically the committee urges the discovery of: (1) those persons in whom it is not difficult to recognize on careful examination that tuberculosis is present; (2) those who are known to have suffered from tuberculosis, but in whom the disease, through treatment, has become latent; (3) those who are subject to cough and expectoration and have been so for a long time; (4) those who are in poor physical condition, suffering either from malnutrition, anemia or weakness, and (5) those who are members of families in which there has been, or now is, a case of tuberculosis.

Many belonging to these classes may readily be discovered by the employer, the superintendent or a foreman; others can be discovered only by a visiting nurse. The persons thus discovered should all be presented to the physician for careful examination and decision as to just what is the best course to pursue to restore them to health. An open case of pulmonary tuberculosis, that is, one in which tubercle bacilli are found present in the sputum, obviously must have immediate and continuous treatment, at home if the hygienic surroundings are suitable or hospital if the home surroundings are not suitable. The expense of sending a large number of patients to hospitals or sanatoriums is, of course, great; therefore many patients must be treated at home; but the surroundings of the home, the size of the family, the crowded condition of the tenement, and especially the presence of young children or babies in the home, must determine whether it is at all justifiable to allow the patient to remain there.

When it is decided that an employee is in a pretuberculous stage, and no bacilli are found in the sputum (if, indeed, there is any sputum), or the case is an arrested one, in which there was previously an active tuberculosis and now the patient again shows some debility, he may quite generally remain at home. Rest, fresh air and medical and visiting-nurse supervision will generally restore him to working health. Of course, a short stay in a sanatorium would be still better, but the limitations of tuberculosis sanatoriums would preclude the reception of many such patients.

In the case of employees who come from families who have suffered from tuberculosis, or employees who have become anemic and debilitated or are suffering from latent tuberculosis, it is hard to overestimate the value of personal instruction in hygiene, which means besides rest, fresh air, plenty of sleep and good food, the cessation of smoking, alcohol and all kinds of dissipation.

Investigations of this sort will also result in the discovery of far-advanced and hopeless cases of pulmonary tuberculosis; proper care will be given to these persons and their families, and the prevention of infection of others, especially of children, will become of inestimable value.

(To be continued)

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[4] Calmette: Rev. Internat. de la Tuberc., 1913, No. 5, p. 321.

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SATURDAY, MARCH 21, 1914

THE INDUCTION OF GASTRIC SECRETION

In the varied forms of food products of unlike origin and composition, prepared for the palate by diversity of technical and culinary processes, the diet of man furnishes to the body not only nutrients in the fundamental sense, but also numerous accessories. We consume both foodstuffs and substances which by stimulating the digestive glands help to provide a supply of the alimentary secretions so essential to proper digestive functioning. The idea that substances exist which induce gastric secretion is not so new as many have been taught to believe. The doctrine was enunciated long before the days of Pawlow's discoveries; under the name of "peptogens," Schiff recognized products like dextrin, peptone, alcohol, etc., which were known in some cases to excite secretion powerfully. But Pawlow carried the physiologic analysis of the secretory processes much farther than his predecessors did; and his classic contributions have served to emphasize the preeminent effect of a group of products. He demonstrated that gastric secretion as the result of food intake is not due merely to mechanical stimulation. Nor is it provoked by all sorts of foods; for instance, white of egg or starch causes no secretion. Pure proteoses or peptones—products of digestion—do not excite it. Meat, however, is a potent stimulus; and its secretory efficiency resides in some chemical substance which can be removed in the decoction of meat, in the guise of bouillon, or extract of meat, or related products.

Do all of the "peptogenic" substances, then, act alike? We now know that they do not. Some of the preparations which, when introduced into the stomach, excite a flow of gastric juice fail to have such an effect if they are brought to the gastric glands through direct injection into the blood-stream. Accordingly we have learned to distinguish a variety of ways in which secretion can be prompted. First, there are the psychic or sensory stimuli; these produce an effect usually as transitory as it is prompt. Then come the substances which need only to be absorbed in order to excite secretion, and which may occur preformed in foods or be liberated in digestion; like a drug, they act whenever they reach the seat of secretion. Last, come those substances which do not act of themselves, but serve rather to produce in the alimentary mucosa some product—a secretin or hormone, as it has been termed—which is absorbed into the blood-stream and carried to the glands where it excites their specific secretory activity. Water illustrates this. Administered subcutaneously it is without effect on gastric secretion; yet when water is introduced directly into the stomach secretion is stimulated.

The food may thus contain either preformed secretins or other compounds which in turn provoke the organism to produce secretins. These facts in themselves are indicative of the diversity of the chemical agents which evoke secretion in the different glands connected with the alimentary tract. Some of them are not present in crude edibles, but arise in the course of their preparation for the table. Cooking and seasoning contribute a share toward the secretin output. The literature of alimentation now abounds in details regarding the comparative secretagogic virtue of numerous familiar food accessories, salts, spices, mineral waters and drugs; and we may confidently expect to find this chapter of physiology, including the complex problem of stomachic and carminative products, placed presently on a more scientific experimental basis.

Regarding the amino-acids, a group of compounds much discussed at present in relation to a variety of questions of medical import, a recent finding deserves incidental notice. Bickel[1] has observed that these substances, at least the mixtures of them obtained in protein hydrolysis, are undoubtedly provocative of gastric secretion when introduced by way of the mouth. Artificially hydrolyzed casein, serum-protein and meat all increase the flow of gastric juice. This outcome gains a practical significance in view of the fact, reported on the authority of Salkowski, that some of the plant extracts, now prepared on a commercial scale and widely sold in certain parts of the world in place of extract of meat, are comparatively rich in amino-acids. Their efficiency as secretin carriers can thus be explained. The waste of the decoctions of some of the commonly cooked vegetable foods has often been decried on the ground that desirable nutrient salts are in this way discarded. Perhaps Bickel's investigation will present in a somewhat different light the question of the losses in vegetables through cooking.

FURTHER LIGHT ON THE USE OF RATTLE-SNAKE-POISON IN THERAPY

We have already called attention to the use of rattlesnake venom in epilepsy and to the danger of employing so powerful an agent in the treatment of human beings.[2]

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[1] Bickel, A.: Ueber die Wirkung von Aminosäuren auf die Magensaftsekretion, Internat. Beitr. z. Path. u. Therap. d. Ernährungsstör., 1913, v. 75.

[2] Rattlesnake Venom in Epilepsy, Queries and Minor Notes, The Journal A. M. A., March 15, 1913, p. 850. The Rattlesnake-Venom Treatment of Epilepsy, editorial, March 29, 1913, p. 1001. Rattlesnake Venom in Epilepsy, Queries and Minor Notes, April 19, 1913, p. 1246. The Rattlesnake-Venom Treatment of Epilepsy, Correspondence, June 7, 1913, p. 1811.

In a previous editorial we expressed the opinion that it would be wise "to leave the crotalin treatment of epilepsy in the hands of its adventurous author for administration to those unfortunate victims of epilepsy whose desperation has led them, knowingly, to assume a great risk, with a very small promise of benefit."

In a study of the subject, John F. Anderson[3] of the Hygienic Laboratory at Washington, reports a death from the crotalin treatment in consequence of infection contained in the specimen, and gives the results of the examination of a large number of samples of crotalin solution prepared by different manufacturers and bought in the open market. The report states that ninety-five ampules of crotalin solution prepared by four different firms were examined and that thirty-five of the number (38.8 per cent.) were found to be contaminated. In many instances this contamination was found to be with anaerobic organisms. In addition, a number of tablets of crotalin, prepared and sold for hypodermic use, were also examined, and every tablet was found to be contaminated.

In view of the statement made by one of the proposers of the crotalin treatment of epilepsy that solutions should be as near a standard and as uniform as possible, the results reported by Anderson as to the variation in the activity of crotalin solutions are of interest. It was found impracticable to determine the extent of variation in the samples of crotalin bought in the open market, but a considerable variation in the potency was found to exist in the product of the same and of different manufacturers. This is, of course, not unexpected, as Noguchi states that the loss in weight from drying of rattlesnake venom varies from 25 to 50 per cent. The point of special interest in the report is a discussion of the difficulty of determining the sterility of specimens of crotalin dispensed. It was found that the bactericidal power of the venom and the antiseptic power of the preservatives contained in the solution of crotalin interfered so much with the application of sterility tests that even when bacteria were known to be present in the solution it was not always possible, on account of the factors referred to above, to determine the presence of the bacteria. It would appear that the bactericidal power of the venom and the antiseptic power of the preservative contained in the crotalin have an important bearing on any sterility tests that may be made by the dispensers of crotalin solutions.

There can be no question about the dried venom always containing a large or small number of bacteria. This must necessarily follow when we consider the habits of the reptile from which the venom is secured and the methods of obtaining it from the snake and of drying and preserving it after it is obtained. The possibility of the presence of pathogenic bacteria difficult of detection, and the further fact that one of the effects of rattlesnake venom is to reduce or abolish the normal bactericidal power of the blood-serum, emphasize the great risk of serious harm from the subcutaneous injections of solutions of rattlesnake poison. To these two dangers should also be added that of the favorable conditions for the growth, in the area of injection, of anaerobic bacteria by reason of local necrosis of tissue from the specific action of the venom.

The subcutaneous injection of crotalin solutions has been recommended by its proposers not only for epilepsy, but also for other conditions of unknown or obscure etiology, such as lumbago, chorea and bronchitis, and even for those of known etiology, such as tuberculosis. While the physician who has the care of an epileptic is often willing to try almost any treatment that will offer a hope of ameliorating the condition of the unfortunate patient, it would certainly seem that he would be taking an unnecessary risk with the life of his patient if he should turn to the use of rattlesnake poison for the treatment of the condition. For its use in a number of other conditions in which it has been proposed, there also seems to be no justification.

DEATHS FOLLOWING INJECTION OF NEOSALVARSAN IN LOS ANGELES

On another page[1] we report the statements made by Dr. C. H. Whitman, superintendent, and Dr. A. T. Charlton, pathologist, at the Los Angeles County Hospital, in regard to the deplorable fatalities which occurred, March 7, in that institution. As we stated last week,[2] the method followed was not the method of Swift and Ellis.[3]

The intraspinal injection of neosalvarsan is, of course, not a new procedure. It has been done repeatedly in some patients. Ravaut,[4] for example, in a recent article reports nine cases of nervous syphilis in which an aggregate of sixty-three intraspinal injections at weekly intervals were given with benefit to the patients. More recently Marinesco and Minea[5] found that serum salvarsanized *in vitro* had a more rapid and powerful action than the serum salvarsanized in the living body. They state that much more arsenic in proportion can be used for the purpose in the test-tube than in the living body, while the dose of salvarsanized serum that can be safely injected into the subarachnoid space seems to be much larger than hitherto deemed possible. They use the patient's own serum after inactivating it, adding the dose of salvarsan or neosalvarsan and then keeping the

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[3] Anderson, John F.: Danger in the Subcutaneous Injection of Solutions of Crotalin, with Report of a Fatal Case, this issue, p. 893.

[1] Deaths Following Injection of Neosalvarsan in Los Angeles, this issue, p. 957.

[2] Deaths from Neosalvarsan in Los Angeles, The Journal A. M. A., March 14, 1914, p. 861.

[3] Swift, H. F., and Ellis, A. W. M.: Study of Spirocheticidal Action of Serum of Patients Treated with Salvarsan, Jour. Exper. Med., October, 1913; abstr., The Journal A. M. A., Oct. 25, 1913, p. 1572.

[4] Ravaut: Ann. de méd., 1914, i, 49.

[5] Marinesco and Minea: Bull. de l'Acad. de méd., 1914, lxxviii, 259.

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THE INDUCTION OF GASTRIC SECRETION

In the varied forms of food products of unlike origin and composition, prepared for the palate by diversity of technical and culinary processes, the diet of man furnishes to the body not only nutrients in the fundamental sense, but also numerous accessories. We consume both foodstuffs and substances which by stimulating the digestive glands help to provide a supply of the alimentary secretions so essential to proper digestive functioning. The idea that substances exist which induce gastric secretion is not so new as many have been taught to believe. The doctrine was enunciated long before the days of Pawlow's discoveries; under the name of "peptogens," Schiff recognized products like dextrin, peptone. alcohol, etc., which were known in some cases to excite secretion powerfully. But Pawlow carried the physiologic analysis of the secretory processes much farther than his predecessors did; and his classic contributions have served to emphasize the preeminent effect of a group of products. He demonstrated that gastric secretion as the result of food intake is not due merely to mechanical stimulation. Nor is it provoked by all sorts of foods; for instance, white of egg or starch causes no secretion. Pure proteoses or peptones—products of digestion—do not excite it. Meat, however, is a potent stimulus; and its secretory efficiency resides in some chemical substance which can be removed in the decoction of meat, in the guise of bouillon, or extract of meat, or related products.

Do all of the "peptogenic" substances, then, act alike? We now know that they do not. Some of the preparations which, when introduced into the stomach, excite a flow of gastric juice fail to have such an effect if they are brought to the gastric glands through direct injection into the blood-stream. Accordingly we have learned to distinguish a variety of ways in which secretion can be prompted. First, there are the psychic or sensory stimuli; these produce an effect usually as transitory as it is prompt. Then come the substances which need only to be absorbed in order to excite secretion, and which may occur preformed in foods or be liberated in digestion; like a drug, they act whenever they reach the seat of secretion. Last, come those substances which do not act of themselves, but serve rather to produce in the alimentary mucosa some product—a secretin or hormone, as it has been termed—which is absorbed into the blood-stream and carried to the glands where it excites their specific secretory activity. Water illustrates this. Administered subcutaneously it is without effect on gastric secretion; yet when water is introduced directly into the stomach secretion is stimulated.

The food may thus contain either preformed secretins or other compounds which in turn provoke the organism to produce secretins. These facts in themselves are indicative of the diversity of the chemical agents which evoke secretion in the different glands connected with the alimentary tract. Some of them are not present in crude edibles, but arise in the course of their preparation for the table. Cooking and seasoning contribute a share toward the secretin output. The literature of alimentation now abounds in details regarding the comparative secretagogic virtue of numerous familiar food accessories, salts, spices, mineral waters and drugs; and we may confidently expect to find this chapter of physiology, including the complex problem of stomachic and carminative products, placed presently on a more scientific experimental basis.

Regarding the amino-acids, a group of compounds much discussed at present in relation to a variety of questions of medical import, a recent finding deserves incidental notice. Bickel[1] has observed that these substances, at least the mixtures of them obtained in protein hydrolysis, are undoubtedly provocative of gastric secretion when introduced by way of the mouth. Artificially hydrolyzed casein, serum-protein and meat all increase the flow of gastric juice. This outcome gains a practical significance in view of the fact, reported on the authority of Salkowski, that some of the plant extracts, now prepared on a commercial scale and widely sold in certain parts of the world in place of extract of meat, are comparatively rich in amino-acids. Their efficiency as secretin carriers can thus be explained. The waste of the decoctions of some of the commonly cooked vegetable foods has often been decried on the ground that desirable nutrient salts are in this way discarded. Perhaps Bickel's investigation will present in a somewhat different light the question of the losses in vegetables through cooking.

FURTHER LIGHT ON THE USE OF RATTLE-SNAKE-POISON IN THERAPY

We have already called attention to the use of rattlesnake venom in epilepsy and to the danger of employing so powerful an agent in the treatment of human beings.[2]

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[1] Bickel, A.: Ueber die Wirkung von Aminosäuren auf die Magensaftsekretion, Internat. Beitr. z. Path. u. Therap. d. Ernährungsstör., 1913, v, 75.

[2] Rattlesnake Venom in Epilepsy, Queries and Minor Notes, The Journal A. M. A., March 15, 1913, p. 850. The Rattlesnake-Venom Treatment of Epilepsy, editorial, March 29, 1913, p. 1001. Rattlesnake Venom in Epilepsy, Queries and Minor Notes, April 19, 1913, p. 1246. The Rattlesnake-Venom Treatment of Epilepsy, Correspondence, June 7, 1913, p. 1811.

In a previous editorial we expressed the opinion that it would be wise "to leave the crotalin treatment of epilepsy in the hands of its adventurous author for administration to those unfortunate victims of epilepsy whose desperation has led them, knowingly, to assume a great risk, with a very small promise of benefit."

In a study of the subject, John F. Anderson[3] of the Hygienic Laboratory at Washington, reports a death from the crotalin treatment in consequence of infection contained in the specimen, and gives the results of the examination of a large number of samples of crotalin solution prepared by different manufacturers and bought in the open market. The report states that ninety-five ampules of crotalin solution prepared by four different firms were examined and that thirty-five of the number (38.8 per cent.) were found to be contaminated. In many instances this contamination was found to be with anaerobic organisms. In addition, a number of tablets of crotalin, prepared and sold for hypodermic use, were also examined, and every tablet was found to be contaminated.

In view of the statement made by one of the proposers of the crotalin treatment of epilepsy that solutions should be as near a standard and as uniform as possible, the results reported by Anderson as to the variation in the activity of crotalin solutions are of interest. It was found impracticable to determine the extent of variation in the samples of crotalin bought in the open market, but a considerable variation in the potency was found to exist in the product of the same and of different manufacturers. This is, of course, not unexpected, as Noguchi states that the loss in weight from drying of rattlesnake venom varies from 25 to 50 per cent. The point of special interest in the report is a discussion of the difficulty of determining the sterility of specimens of crotalin dispensed. It was found that the bactericidal power of the venom and the antiseptic power of the preservatives contained in the solution of crotalin interfered so much with the application of sterility tests that even when bacteria were known to be present in the solution it was not always possible, on account of the factors referred to above, to determine the presence of the bacteria. It would appear that the bactericidal power of the venom and the antiseptic power of the preservative contained in the crotalin have an important bearing on any sterility tests that may be made by the dispensers of crotalin solutions.

There can be no question about the dried venom always containing a large or small number of bacteria. This must necessarily follow when we consider the habits of the reptile from which the venom is secured and the methods of obtaining it from the snake and of drying and preserving it after it is obtained. The possibility of the presence of pathogenic bacteria difficult of detection, and the further fact that one of the effects of rattlesnake venom is to reduce or abolish the normal bactericidal power of the blood-serum, emphasize the great risk of serious harm from the subcutaneous injections of solutions of rattlesnake poison. To these two dangers should also be added that of the favorable conditions for the growth, in the area of injection, of anaerobic bacteria by reason of local necrosis of tissue from the specific action of the venom.

The subcutaneous injection of crotalin solutions has been recommended by its proposers not only for epilepsy, but also for other conditions of unknown or obscure etiology, such as lumbago, chorea and bronchitis, and even for those of known etiology, such as tuberculosis. While the physician who has the care of an epileptic is often willing to try almost any treatment that will offer a hope of ameliorating the condition of the unfortunate patient, it would certainly seem that he would be taking an unnecessary risk with the life of his patient if he should turn to the use of rattlesnake poison for the treatment of the condition. For its use in a number of other conditions in which it has been proposed, there also seems to be no justification.

DEATHS FOLLOWING INJECTION OF NEO-SALVARSAN IN LOS ANGELES

On another page[1] we report the statements made by Dr. C. H. Whitman, superintendent, and Dr. A. T. Charlton, pathologist, at the Los Angeles County Hospital, in regard to the deplorable fatalities which occurred, March 7, in that institution. As we stated last week,[2] the method followed was not the method of Swift and Ellis.[3]

The intraspinal injection of neosalvarsan is, of course, not a new procedure. It has been done repeatedly in some patients. Ravaut,[4] for example, in a recent article reports nine cases of nervous syphilis in which an aggregate of sixty-three intraspinal injections at weekly intervals were given with benefit to the patients. More recently Marinesco and Minea[5] found that serum salvarsanized *in vitro* had a more rapid and powerful action than the serum salvarsanized in the living body. They state that much more arsenic in proportion can be used for the purpose in the test-tube than in the living body, while the dose of salvarsanized serum that can be safely injected into the subarachnoid space seems to be much larger than hitherto deemed possible. They use the patient's own serum after inactivating it, adding the dose of salvarsan or neosalvarsan and then keeping the whole at body heat for three-quarters of an hour. This method of treatment was applied in twenty cases of syphilis affecting the central nervous system, including sixteen tabetics, a case of cervical meningomyelitis with atrophy of the Aran-Duchenne type; a case of tetraplegia, and two of agonizing headache, pain in the limbs and much leukocytosis, with intense Nonne and Wassermann positive in the cerebrospinal fluid. The injections were made at intervals of seven or eight days, and the dose of neosalvarsan thus injected ranged from 0.006 to 0.012 gm. The same method was applied to fifteen other patients, the salvarsanized serum being injected into the subarachnoid space over the frontal lobe. The results on the whole were disappointing, but the interval since has been only from four to seven weeks, so that the ultimate value of the method is not known.

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[3] Anderson, John F.: Danger in the Subcutaneous Injection of Solutions of Crotalin, with Report of a Fatal Case, this issue, p. 893.

[1] Deaths Following Injection of Neosalvarsan in Los Angeles, this issue, p. 957.

[2] Deaths from Neosalvarsan in Los Angeles, THE JOURNAL A. M. A., March 14, 1914, p. 861.

[3] Swift, H. F., and Ellis, A. W. M.: Study of Spirochetìcidal Action of Serum of Patients Treated with Salvarsan, Jour. Exper. Med., October, 1913; abstr., THE JOURNAL A. M. A., Oct. 25, 1913, p. 1572.

[4] Ravaut: Ann. de méd., 1914, i, 49.

[5] Marinesco and Minea: Bull. de l'Acad. de méd., 1914, lxxviii, 259.

The attempt in Los Angeles was, then, not an untried experiment; and in desperate cases of nervous syphilis was an attempt justified by the possibilities of benefit to the patients. From the reports we have received it would seem that the technic used in these fatal cases differed from the preceding in at least two respects; thus the neosalvarsan solution was heated to 54 C. (129.2 F.) for half an hour, and the solution, even though in hermetically sealed tubes, was kept for twenty-four hours before use. Neosalvarsan is a very unstable substance so that the question arises as to whether these procedures might not be fraught with danger. In the face of such a catastrophe it is to be deplored that six of the bodies should have been embalmed before there was an opportunity for necropsy.

We regret that we have not been able to secure more details regarding the individual cases, the time at which symptoms of poisoning showed themselves, the interval between the injection and death, etc. Our comments are, therefore, based on rather incomplete information.

SOME STATISTICS CONCERNING INTESTINAL PARASITES

The pathogenicity of some of the intestinal parasites has become the subject of more detailed study of late, owing, we believe, in part to the stimulus received from the current interest in all topics pertaining to tropical medicine, and in part to the newer discoveries respecting the biochemistry of these organisms.[1] There is no species of animal and no race or class of man known to be free from parasites. The frequency of their distribution depends as a rule on certain features of the environment and the hygienic standards of the people. In general, animal parasitism increases from temperate to tropical climates; and all intestinal parasites decrease proportionately with the increase of care exercised in a proper system of latrines and sewers. The incidence of intestinal parasites in the Philippine Islands has been the subject of investigation by numerous workers since the American occupation.[2] These studies, which have been made largely from the clinical point of view, using the microscopic examination of the feces as the standard of incidence, indicated that out of over 19,000 persons examined by this method, 85 per cent. were infected with one or more species of intestinal parasite. These valuable data have now been supplemented by the findings in 500 consecutive necropsies performed in the department of pathology and bacteriology at the College of Medicine and Surgery in Manila.[3] While the class of cases on which the report is based is more comprehensive as to age, sex and distribution than some of the series of cases previously investigated, the fact that a large percentage of the present cases comes from a hospital in which routine treatment for intestinal parasites is in vogue may diminish the number of parasites found post mortem and somewhat invalidate the percentage values which follow here. *Ascaris lumbricoides* occurred in 41.2 per cent., *Trichuris trichiura* in 34.4, hookworm in 16.6, *Taenia saginata* in 0.2, *Cysticercus cellulosae* in 0.2, *Oxyuris* in 1, *Clonorchis sinensis* in 0.4, *Schistosoma japonicum* in 0.2. Amebic colitis occurred in five persons.

It has been stated by some authors that ascaris, which is seen to be the most common form of zoöparasite encountered, leaves the human host in the course of febrile disease. The review of the Manila cases, including those of malaria, typhoid, plague, lobar pneumonia and bacillary dysentery in abundance, shows that the febrile cases, with an incidence of ascaris ranging from 26 to 66 per cent., did not have a lower percentage of infestation than non-febrile cases. Although by far the greater number of persons harboring these parasites present no derangements which can readily be attributed to the presence of ascaris, instances of possible toxic action are nevertheless recorded. Two clinical cases of appendicitis in which trichuris was found in the appendix have been encountered. One *Taenia saginata* (the beef tapeworm) was the only tapeworm encountered. In the Philippines, the infrequence of *Taenia solium* (the pork tapeworm) in man, has been deemed noteworthy as compared with the great frequence of cysticercus in hogs.

ATHLETIC SPORTS IN RELATION TO HEALTH

It is one of the numerous paradoxical facts encountered in every-day life that the problems of athletics rarely receive the attention of those who are most concerned with health, the supposed ultimate purpose of bodily exercise. The management of athletics is rarely found in the hands of a physician, by whose scientific guidance one might reasonably expect that the various sports would be enabled to effect the best of which they are capable and would be freed from the unconcealed dangers attending some of the present athletic practices. Athletics have for the most part to-day become the province of the people at large. It is the uneducated trainer rather than the physician, the hero-worshipper rather than the hygienist, who directs and inspires the performance of the physical exercises which ought to be undertaken primarily in the interests of a sound body and a sound mind. Games have developed into contests in which victory is sought at any human price. The "manager" is the foremost adviser, and the physician is called on as a last resource to mend the damage that may have been done in an ill-advised struggle for athletic supremacy. Such are the exhibitions that the populace wants. Until there is a wide-spread education of the people as to the proper underlying purpose of bodily exercise and the dangers that beset the indiscriminate and uncontrolled pursuit of athletics by every one whom the inclination stirs, it is a seemingly hopeless task to preach the gospel of reform.

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[1] The Toxic Properties of Familiar Intestinal Parasites, editorial, The Journal A. M. A., May 4, 1912, p. 1377.

[2] The results are recorded by various investigators in the volumes of the Philippine Jour. Sc., Sec. B., from 1908, iii, to 1911, vi.

[3] Crowell, B. C., and Hammack, R. W.: Intestinal Parasites Encountered in Five Hundred Autopsies, with Reports of Cases, Philippine Jour. Sc., B., Tropical Med., 1913, viii, 157.

Meanwhile the physician and the physiologist must content themselves with acquiring the data on the basis of which sound judgment in relation to the problems of exercise and sane advice in the pursuit of athletic sports may be obtained. Only the beginnings have been made in this field of study. If football or rowing or bicycling have their dangers, what are they? Wherein do the respective advantages of the various types of physical exercise lie and what are their unquestioned effects on the organism? What are the physiologic prerequisites for participation in each form of gymnastic performance? These and a host of similar questions demand ready answers in respect to which there should be common accord, precisely as there now is a growing appreciation of the physical standard of health demanded in the various industrial occupations. In the latter case the subject is investigated because it has become a matter of dollars and cents. When health and happiness are the sole end sought the same question has been neglected.

Among the internal organs the heart and kidneys have hitherto received most consideration in connection with the physiology of exercise. There is an idea abroad that each form of athletics has its own peculiar types of pathologic defects. Just as one hears of the "tobacco heart," there are the alleged "bicycle heart," "football kidney," etc. It has been the merit of Albu[1] in Berlin to point out that the pathogenesis of the abnormal conditions familiarly associated with the pursuit of athletics may be interpreted from a common point of view. In other words, all undue muscular exertion, whether carried out by one group of muscles or another, in one type of movement or a different one, affects certain groups of organs and metabolism in general in entirely comparable ways. The physiologic or pathologic result may vary in degree but not in kind. The effect of vigorous exercise in its more extreme manifestations exhibits two phases: first, there is a stimulation bringing about a rapid, vigorous circulation to the taxed muscles and the internal organs and disclosing itself by the rise of blood-pressure and augmented cardiac activity; this is followed sooner or later as the varying intensity of the exertion may determine by a depression phase. A fall in blood-pressure and functional heart-weakness ensues. It is the latter aspect of the results of undue exercise, with the derived consequences of cardiac insufficiency, that is most likely to engage the attention of the physician. In varying intensity the symptoms of stasis throughout the circulation now arise. Venous stasis in the kidneys occasions the characteristic nephritic changes which find expression in the altered composition of the urine. Every sort of pathologic sediment ranging from the slightest deviation from normal to the picture of severe nephritis may be seen. Frequently the extremely sudden onset of circulatory changes determines a degree of venous hyperemia quite comparable with the condition in acute hemorrhagic nephritis. In the "athletic kidney," however, the pathologic manifestations are always caused by functional disturbances rather than by morphologic alterations in kidney structure. In this respect, Albu is inclined to compare the kidney changes resulting from undue exercise with those occurring in orthostatic albuminuria, which is likewise presumably a purely functional phenomenon. He believes that extreme exertion of the musculature of the lower limbs is far more likely to induce renal stasis than the exercise of other groups of muscles. In confirmation of this it is said that even vigorous use of so-called chest-weights and other apparatus of similar design rarely, if ever, disposes to abnormal kidney manifestations in the way that running may.

It has been asserted that the kidney disorders at times discovered as the result of the active use of the lower limbs, in running-matches, for instance, are due to the mechanical jar or vibration peculiar to this form of exercise. Observations made on numerous persons who have undergone long journeys by railway, in which the opportunity for such alleged injury by vibration alone is not inconsiderable, have failed to disclose any damage to the kidneys.

Athletic exercises may be differentiated into feats of strength and feats of endurance. Albu maintains that these differ essentially only in the fact that in the one case (in tests of strength) the initial rise in blood-pressure is very soon transformed into one of depressed circulation; in the case of endurance tests this comes about more gradually. In feats of endurance the fall in blood-pressure reaches a much lower level than is found in the brief exhibition of great muscular exertion; and the physiologic consequences are determined accordingly. There are no important differences between the different types of athletic sports in respect to their physiologic effects on the body. The severe symptoms, however, make their appearance more prominently in the exercises like football, wrestling, bicycle contests, etc., which may call for extreme exertion. Every forced muscular exertion leads to a precipitate rush of blood to the periphery and the internal organs. An enormous volume of blood may be driven into the arteries in a very brief period. When the cause of this circulatory response is removed, equilibrium speedily ensues. The heart is not overtaxed unduly long and the encountered weakness is transitory at most; but in contests of long endurance the final outcome is a prolonged and unrelieved fall in pressure with an increasing relaxation of the fatigued cardiac musculature.

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[1] Albu, A.: Beiträge zur pathologischen Physiologie des Sports, Ztschr. f. klin. Med., 1913, lxxviii, 151. Jundell and Fries: Nord. med. Ark., 1911. Jundell and Sjögren: ibid., 1912.

To what degree the distinctly pathologic manifestations of improper athletics may arise depends on a variety of circumstances, some of which can readily be indicated. Age is a factor of significance. During the period of adolescence when the organs have not reached their full development the responses are pronounced, and the person is unusually sensitive to muscular excesses. "Constitution" expresses in a somewhat vague way another factor which determines the fitness of a person for athletics. There must be adequate development, suitable nutrition and a competent nervous system, the latter element often being undervalued. Obviously, appropriate training furnishes another safeguard against the dangers of athletic overdoing. Much of what is called "training" in this country is, however, a combination of unscientific and sometimes irrational dietetics with psychic quackery. Last but not least, the degree of exertion required is a feature of determining significance when the ill effects of athletic sports are to be avoided. The distinction between doing and overdoing needs to be learned and appreciated more than any other single factor in the rational pursuit of bodily exercise for health and enjoyment rather than for personal superiority and group supremacy.

Current Comment

ADRENAL GLYCOSURIA IN MAN

Since it is becoming more evident that the conspicuous vasomotor properties of extracts of the adrenals cannot be regarded as exemplifying a continuous influence exerted by these organs in the normal individual, attention is being directed to other functions exerted by them. The analogy between the action of epinephrin and that which occurs on stimulation of the sympathetic nervous system suggests possible non-circulatory effects of the adrenal secretion. Even more promising, however, for the interpretation of unsuspected activities of these ductless glands is the discovery by Blum, in 1901, that extracts of the adrenals may provoke a typical glycosuria. This fact has been abundantly verified on various species of animals, and the details of the mechanism involved have been subjected to experimental analysis. In a general way it appears that the injection of adrenal extracts, or the epinephrin isolated therefrom, leads to a "mobilizing" of glycogen — a rapid contribution of sugar to the blood with a consequent glycosuria. Just as after the discovery of the vasomotor properties of adrenal extracts the conclusion was promptly drawn that the glands regulate vasomotor tone by pouring out more or less of their active principle, epinephrin, into the circulation, so the glycosuria-producing effects of injected epinephrin have become the subject of hypothesis with regard to the metabolism of sugar in the body. The adrenals were looked on by the earlier enthusiasts in this field as constantly regulating the level of sugar in the blood, more or less epinephrin being "secreted" into the circulation to produce a prompt conversion of stored glycogen to meet the changing needs of the organism. We have already pointed out[1] how cautious one must be at present in ascribing too general functions to the adrenal bodies. It is probably as premature to assume that *normally* they exert a continuous regulatory influence on the carbohydrate metabolism of the organism as it was to assert that they are continually supplying epinephrin to the circulation in order to maintain the *normal* vasomotor tone. This need not minimize the possible efficacy of the glands on other than ordinary physiologic occasions. It is now to be determined under precisely what circumstances and emergencies the adrenals are called on to contribute their potent product. Inasmuch as it can no longer be questioned that, under some circumstances at any rate, the carbohydrate-mobilizing capacities of adrenals come into play in the animal organism, it is of added importance to substantiate such possibilities in man as well. This is always a step in the perfection of scientific discoveries in the domain of animal physiology. Landau[2] has furnished the desired proof. He notes that when 156 gm. (5 ounces) of glucose are fed to man the sugar-content of the blood is raised, but ordinarily not to the point that calls forth glycosuria. If, however, a subcutaneous injection of epinephrin is made when the glucose is given, pronounced hyperglycemia and glycosuria put in their appearance. This is precisely what was to be expected from earlier experiences in the laboratory; but the clinician is not satisfied until the dicta of physiology are verified, as they have been in this instance, by direct evidence on man.

THE MENACE OF THE FEEBLE-MINDED

The economic and social problems connected with the feeble-minded are of far greater importance than the average "man on the street" realizes. Whatever the cause, the fact is that this class is increasing enormously in all civilized countries. Some figures connected with one state are supplied in a report of the Committee of Visitors of the State Charities of New York. According to this report, there are in that state, at present, 32,000 feeble-minded persons. Of these, 4,900 are provided for in institutions especially designed for their care, and 4,500 in other institutions, leaving at large 22,600. It has been estimated that of the 32,000 feeble-minded, 10,000 are girls and women of child-bearing age, 1,750 of whom are cared for in institutions designed for the care of such persons, and 1,625 are confined in reformatories, prisons and almshouses, leaving about 7,000 at large in the community. Goddard estimates that, in the way of spreading disease and immorality and increasing the stock of feeble-minded, a girl or woman of this class, of child-bearing age, is three times as great a menace to the community as a feeble-minded boy or man. The Royal Commission of England reports that in that country the feeble-minded are increasing at twice the rate of the general population. The importance of providing, by the establishment of additional institutions and the completion of those under way, for the custodial care or control of a greater number of the feeble-minded cannot be overestimated. The statements of Amos W. Butler[1] of Indiana to the effect that feeble-mindedness produces more pauperism, degeneracy and crime than any other force, that it touches every form of charitable activity, that it is felt in every part of the state and affects in some way all the people, and that its cost is beyond comprehension, are again quoted as the best argument for the policies advocated.

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[1] The Suprarenals and Vasomotor Tonus, editorial, The Journal A. M. A., March 7, 1914, p. 778.

[2] Landau, A.: Studien über Adrenalinglykosurie beim Menschen, Ztschr. f. klin. Med., 1911, lxxix, 201.

THE AMERICAN JOURNAL OF PHYSIOLOGY

It is announced that Dr. William T. Porter is to retire as editor of the *American Journal of Physiology* at the completion of the current, thirty-third volume of this important publication. It was largely through his initiative that this periodical was founded in 1898; and though the enterprise has received the sanction and official support of the American Physiological Society, from the beginning, Dr. Porter not only has assumed the burden of editorial management, but also has been financially responsible for it. This wholly disinterested service has been of great importance to physiology in general, and of peculiar helpfulness to the progress of the science in America. The possibilities in the way of publication which have been opened to the research workers in American laboratories through the inauguration in this country of journals devoted to the premedical sciences, can be fully appreciated only by those who little more than a decade ago were forced either to send their contributions to publications abroad, often to be printed in a foreign language, or to accept the meager opportunities offered by a few of our own medical journals. Even more important, however, is the influence that the *American Journal of Physiology* has exerted in all parts of the educated world in enhancing the prestige of American physiologists and their work. Its high standard of excellence in form and content forced attention to the research work being accomplished here and speedily placed the rapidly developing American laboratories in the front rank. The enumeration of the prominent contributions which have appeared in the pages of the journal since 1898 would unfold the story of many of the most notable advances that physiology has experienced within this period. Few who have not experienced the demands which unceasing editorial duties make on the energy and initiative, the ingenuity and forbearance of an otherwise engaged individual, can adequately appreciate the splendid ability with which Dr. Porter so generously and willingly undertook and carried this task to the point at which the work cannot easily fail to be sustained for the future. He richly deserves the thanks of those who have the best interests of the thriving science of physiology at heart. We are glad to learn that the American Physiological Society will assume the ownership and editorial control and continue the publication. Until a permanent arrangement is made, the editorial work will be in charge of an editorial committee, of which Prof. W. H. Howell of Baltimore is chairman.

A DANGEROUS PASTRY

The custard has a special place in the dietary of many institutions because of its appetizing taste and aspect, and its nutritious qualities as well. Recently at Cholet in France, immediately after a wedding feast, thirty-eight of fifty persons became violently ill and ten died. A study of the cause has been made by Chantemesse and Rodriguez,[1] who traced the poisoning to a *gâteau à la crème*, a dish containing a custard with a browned meringue. The fact that the custard had been boiled pointed to chemical poisoning, but Chantemesse isolated from the uncooked portions of the whites of eggs remaining from the meringue a peculiarly toxic paratyphoid bacillus, which on injection into animals reproduced the symptoms. The browning of the meringue, by forming an air-tight covering, had provided anaerobic conditions in which the germs could develop. As the custard had been made the day before and kept in the warm kitchen, sufficient time had elapsed for much growth. Some of the custard, eaten when first made, caused no disturbance. The danger from food so contaminated is not only from the bacilli ready to multiply in the host, but also from the toxins already produced by them in the food. These toxins rapidly spread throughout the whole mass, as shown by Chantemesse's experiments with guinea-pigs. The hundreds of cases of poisoning which have occurred from eating such creams and custard dishes all have the one feature in common that some portion of the eggs has not been sterilized by heat. The leathery top of the meringue excludes contamination from flies in such cases, and if the eggs had been infected beforehand the smell would have prevented their use in food. Investigation of the history of the cook at Cholet revealed a series of poisonings from her boiled custards. This was found to be the fifth occurrence of the kind in the last twelve years, during which she had served at various places, although no deaths had previously resulted. She was a healthy woman with no pathologic past, and her blood did not agglutinate the bacillus in question, but it swarmed in her stools. This healthy carrier evidently was not a source of danger for others except when the virulence of the bacilli was enhanced by conditions such as were provided by custard and meringue which had been kept in a warm place for thirty hours. In conclusion Chantemesse remarked that the occurrences here related throw light on a celebrated murder trial at Paris in 1840, in which a woman was convicted of having poisoned her husband, who died with similar symptoms after eating a cream preparation which she had sent him at Paris from the country home. Four days had elapsed before he ate the pastry. Traces of arsenic were found in the husband's viscera, but Chantemesse remarks that the arsenic might have been explained by impurities in the bismuth which the husband was known to have taken. The investigation is an interesting one of scientific and practical importance, and incidents of similar character merit most careful study by the physician in whose experience they occur.

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[1] Butler, Amos W.: The Burden of Feeble-Mindedness, address before the National Conference of Charities in 1907.

[1] Chantemesse and Rodriguez: Bull. de l'Acad. de méd., 1914, xxi, 245.

Medical News

ALASKA

Holds "Bogus Diploma."—A sworn affidavit signed by Dr. Byrd, the former dean of Willamette University Medical Department, sent to the Alaska Board of Medical Examiners states that the diploma held by Ernest Charles Dalton, now residing at Valdez, was obtained by him "through deception and fraud."

ARKANSAS

New Officers.—Searcy County Medical Society at Marshall: president, Dr. Louis D. Robertson, Leslie; secretary-treasurer, Dr. Andy S. Melton, Snowball.

Railway Hospital at Argenta.—The board of the hospital service of managers of the Missouri Pacific-Iron Mountain System, has decided to erect a hospital at Argenta, and has appropriated $5,000 for that purpose.

Small-Pox.—Under date of February 25 small-pox was reported from Elm Springs, Ark., where nine deaths had occurred from the disease. Small-pox was brought to Elm Springs by a woman and her little girl who had recently come from Tampico, Mexico.

Personal.—A banquet was given at Warren, February 26, in honor of Dr. G. S. Porter. Dr. Porter, after fifteen years of practice in Warren, is to move to California.——The house of Dr. George F. Jackson, Little Rock, was destroyed by fire, Ferbuary 13, with a loss of about $5,500.

CALIFORNIA

Stanford Medical Lectures.—The fourth of the course of six popular medical lectures, held under the auspices of the Stanford University at Lane Hall, will be delivered March 27, by Dr. Walter W. Boardman on "The X-Ray in Medicine and Surgery," with demonstration.

Personal.—Dr. and Mrs. Ellis W. Jones, Los Angeles, sailed for Europe, February 28.——Dr. Thomas D. Maher has succeeded Dr. Emmet L. Wample as medical inspector of the public schools of San Francisco.——Dr. Norman Bridge, Los Angeles, who has been seriously ill for several days, is reported to be improving.

Leprosy Introduced into State.—Reports have been made of leprosy being introduced into California by Mexican refugees. There have been four cases reported in San Bernardino County, three in Los Angeles and three in San Francisco, all the infected persons being Mexicans. The State Board of Health, at a meeting held February 28, adopted a resolution putting leprosy on the list of quarantine diseases.

The Hooper Foundation.—The opening ceremonies of the Institute for Medical Research, founded by Mrs. George William Hooper in memory of her husband, were held March 7 at the University of California Hospital, San Francisco. After an address by Hon. Curtis H. Lindsey, the president, Henry S. Pritchett of the Carnegie Foundation spoke on "The Value of Medical Research to a Great City." Dr. Richard Mills Pearce, Philadelphia, delivered an address on "The Opportunity of the University in Medical Research." After the ceremonies, a reception was held in honor of Mrs. George William Hooper. Mrs. Hooper has given $1,000,000, yielding an annual income of about $50,000, as an endowment fund to the Institute. The advisory council will consist of Henry S. Pritchett; Dr. William H. Welch, Baltimore; President Benjamin Ide Wheeler, University of California; Dr. Herbert C. Moffitt, dean of the medical department of the University; Mr. C. F. Connelly, San Francisco, and Dr. Richard Mills Pearce, University of Pennsylvania.

ILLINOIS

Tuberculosis Patients Transferred.—The new Cook County Tuberculosis Hospital, Oak Forest, received 135 patients March 12, transferred from the old institution at Dunning.

Clinical Day at Danville.—Under the auspices of the Vermillion County Medical Society, an all-day clinic was held at St. Elizabeth's Hospital, March 9, with fifty physicians in attendance. In the evening the Sisters of the hospital served a dinner, after which a meeting of the society was held.

Personal.—Dr. John J. Grant, Freeport, has been appointed local surgeon of the Illinois Pacific System.——Dr. John W. Seids, Rock Island, fractured his arm while cranking his motor-car, March 4.——Miss Velora E. Randel, Chicago, has been appointed a member of the staff of the State Nurse Examiners.——Dr. Harry R. Wormeley and family, Shabbona, have gone to Vienna for two years.——Dr. Louis Ostrom has been elected president, Dr. Carl O. Bernhardi, vice-president, and Dr. John C. Souders, secretary-treasurer, of the medical and surgical staff of St. Anthony's Hospital, Rock Island.

Chicago

Personal.—Dr. Abraham J. Moss, for five years in charge of the Mount Sinai Hospital, New York, has been appointed superintendent of the Maimonides Kosher Hospital, Chicago.

Senn Monument.—Dr. Truman W. Brophy, representing the Senn Club, presented before the board of councilors of the Chicago Medical Society a project to raise $25,000 for the erection of a monument to Dr. Nicholas Senn in Lincoln Park. The council took favorable action regarding the movement and authorized members of the society to attempt to obtain the subscription required, more than one-half of which is already subscribed.

KENTUCKY

Personal.—Dr. Henry G. Reynolds has succeeded Dr. Henry M. Childress, resigned, as ophthalmologic surgeon of the Children's Hospital, Paducah.

Sanitarium Burns.—The Meredith Sanitarium, Scottsville, was burned to the ground, March 11, with a loss of $10,000, partially secured by insurance. No casualties occurred.

Honor Semi-Centennial of Physician.—The Oldham County Medical Society, at its meeting at Lagrange, was given a dinner by Dr. Edgar D. Burnett, Anchorage, in honor of Dr. John H. Speer, Brownsboro, who has practiced in the county for fifty years.

Louisville City Hospital Items.—An eye clinic has been added to the Hospital, under the charge of Dr. James M. Ray.——The Hospital and contents have been insured for $200,000—$150,000 on the eleven buildings, and $50,000 on the contents.——The term "intern" has been abolished, and hereafter the members of the house staff will be known as resident physicians.

Small-Pox in Kentucky.—According to a report of the secretary of the State Board of Health during February, small-pox was prevalent in eighty-three of the 120 counties of the state. In many communities forty or fifty cases occurred, which were not promptly reported. Kentucky has a compulsory vaccination law. The State Board of Health has issued a letter to the public, urging vaccination and warning the people that small-pox could occur only in individuals who have not been properly vaccinated.

LOUISIANA

Will Rebuild Sanitarium.—Dr. E. M. Ellis of the Crowley Sanitarium, which was recently burned, will, it is understood, rebuild the institution as a two-story building, with accommodations for twenty-four patients.

Societies Reorganize.—Point Coupée Parish Medical Society was reorganized at New Roads, February 19, and Dr. Robert M. Carruth, New Roads, was elected president; Dr. Louis E. Bergeron, vice-president, and Dr. Marie O. Becnel, New Roads, treasurer. Dr. Fred J. Mayer, president of the State Medical Society, in his address, accentuated the necessity of organizing the county societies as a unit.——Jefferson Parish Medical Society was organized at Jennings, March 2, with the following officers: president, Dr. George W. Remage, Jennings; vice-president, Dr. Valerion A. Miller, Lake Arthur; secretary-treasurer, Dr. D. C. Foy.

Personal.—Dr. Sidney D. Porter, State Sanitary Officer, director of the Rockefeller Hookworm Foundation, was operated on in the Touro Hospital, and is reported to be improving.——Dr. J. E. Valarus Bournette, Alexandria, is said to have been found of unsound mind and committed to the Louisiana Hospital for the Insane, Pineville.——Wilfred J. Magee, Chief of the New Orleans Branch Laboratory of the United States Department of Agriculture, has been appointed chemist of the Washington, D. C., Branch Laboratory.——Dr. D. Harvey Dillon, Many, formerly president of the Louisiana State Board of Health, was shot at from ambush, February 11, but was not injured.

MARYLAND

Meetings.—The annual meeting of the Medical and Chirurgical Faculty of Maryland will be held April 28-30.——The seventieth annual meeting of the American Medico-Psychological Association will be held in Baltimore from May 26-29, inclusive. The annual oration will be delivered by Dr. Lewellys F. Barker, the subject being "The Relations of Internal Medicine to Psychiatry."

Illegal Practice of Medicine and Pharmacy Halted.—As the result of the activity of newspaper publicity and the cooperation of the State Board of Medical Examiners with the police department, fifteen persons have been arrested for practicing medicine or pharmacy illegally in Baltimore. These cases will all be prosecuted by the state's attorney at the request of Dr. Herbert Harlan, president of the State Board of Medical Examiners, and a determined effort made to stop the illegal practice of medicine and pharmacy in Baltimore.

Small-Pox in Baltimore Continues.—Health Commissioner Nathan R. Gorter has selected twenty-four extra vaccine physicians and a systematic vaccine campaign of the entire city has been instituted. New cases are cropping out every day. The Health Department has an ordinance before the city council giving it the right to examine arms for marks of successful vaccination. An amendment opposing this and requiring the department to accept as evidence of this a certificate of a reputable physician has been introduced. The health commissioner is opposing this ordinance and it is a debatable question whether or not the department will be successful in having their ordinance passed.

Personal.—Dr. Russell W. Raynor, Vienna, of the staff of the Presbyterian Eye, Ear and Throat Hospital, has left that institution and is now on his way to take up new duties for the government in Kentucky, where he will be employed in combating trachoma.——Dr. Fred Caruthers, formerly coroner of the Northeastern District, underwent a second operation last week at the Franklin Square Hospital for an abscess of the jaw.——Dr. George W. Slater, Walbrook, Baltimore, who was seriously hurt two weeks ago by a fall on the ice, has had a relapse.——Dr. Walter W. Point, Jr., has been appointed assistant surgeon to the Sydenham Hospital, to fill the vacancy caused by the promotion of Dr. John F. Hogan to the place of superintendent, to succeed Dr. Samuel T. Nicholson, Jr., resigned.——Dr. Benjamin Swint, Baltimore, formerly resident physician of St. Joseph's Hospital, is reported to be ill in that institution.

Need for Contagious Disease Hospital.—Dr. William H. Welch and Dr. Winford H. Smith stated in addressing the health conference of the Medical [illegible] on "The Responsibility of the City ir [illegible] Diseases" that present conditions in [illegible] rd to the care of persons with infectious diseases are inhuman, scandalous, shameless and directly fatal to many who might have had a chance to survive under proper conditions, and that Sydenham Hospital, with its 35 beds, only for scarlet fever and diphtheria was fatally inadequate. They urged as a solution the erection of a hospital with at least 300 beds and provision for all infectious diseases and a bond issue of from $500,000 to $700,000 to pay for it, as Dr. Welch declared it to be unfair for this generation of taxpayers to meet all the expense. The Baltimore City Medical Society has appointed a special committee consisting of Drs. Archibald C. Harrison, Winford H. Smith, Louis P. Hamburger, Charles O'Donovan and Thomas R. Brown to cooperate with the city council in considering plans for the future of Sydenham Hospital.

MASSACHUSETTS

Fire at Carney.—Quick work and good sense on the part of physicians and nurses prevented a panic in the male ward of the Carney Hospital, South Boston, March 4. A fire started on the fourth floor and the work of extinguishing it was directed by Dr. James J. Regan.

Tonsillitis at Wakefield.—Under date of March 3, 300 cases of tonsillitis were said to have occurred in Wakefield and seventy-five new cases were reported on that date. The Board of Health requested the citizens to boil the drinking water. The source of the epidemic had not been determined, but there was some reason to believe it was from an infective milk-supply. The water-supply of this city from Crystal Lake was recently condemned by the State Board of Health, and the town is using water from the Metropolitan water system.

Personal.—Dr. Francis W. Peabody, Boston, has been selected as medical assistant to President Judson of the University of Chicago, on his trip to the Orient, under the auspices of the Rockefeller Foundation, to study medical conditions.——Dr. James Lloyd Wellington, Swansea, who is said to be the oldest graduate of Harvard College, celebrated his ninety-sixth birthday anniversary recently.——Dr. George H. Francis has been elected water commissioner of Brookline, and Drs. Benjamin S. Blanchard and Arthur A. Cushing have been elected members of the school committee.——Dr. J. Harper Blaisdell, Lynn, has been appointed a member of the dermatological staff of the Massachusetts General Hospital.

MICHIGAN

The Sanatorium Campaign.—The active campaign for a Detroit Tuberculosis Sanatorium has been very successful, and by March 9 more than $37,500 of the $50,000 required had been subscribed.

Want Hospital Enlarged.—In the annual budget of the Detroit Board of Health, $1,250,000 was asked for the Herman Kiefer Hospital on Hamilton Boulevard, the enlargement of which is the first step toward the new municipal hospital.

Personal.—Dr. and Mrs. Thomas J. Haines, Three Rivers, sailed for Europe March 17.——Dr. Edward W. Tolley, Grand Rapids, is reported to be seriously ill with appendicitis.——Dr. Henry S. Cole has been renominated for mayor of Whitehall without opposition.——Dr. Mortimer Willson has been elected president of the Port Huron Hospital Association.——Dr. Thomas E. McDonald, Holly, is reported to be ill with rheumatism, and is at the hospital in Pontiac.

MINNESOTA

Water Sources Condemned.—Dr. Robert H. Mullin, Minneapolis, chief of the laboratory division of the State Board of Health, has reported as unsatisfactory thirty-one of the sixty-one sources of supply of the drinking water for railway passengers in the state.

Tri-County Sanatorium Favored.—At a joint meeting of the medical societies of Brown, Watonwan and Nicolett counties held at New Ulm, February 19, a project for a tri-county sanatorium was discussed. It was stated that a building sufficiently large to accommodate forty patients would amply meet the needs of the counties, and that such a building could be erected at a cost of $42,000, one-half of which would be appropriated by the state.

Diphtheria in a Minneapolis Dairy.—The City Health Commissioner, March 5, ordered closed one of the dairies of the cities after four persons connected with it had been taken to the city hospital ill with diphtheria. Several cases of the disease are said to have developed along the milk route of the dairy. The Health Commissioner reported that about one hundred persons had been exposed to the disease by contact with two of the wagon drivers from the dairy. No fatalities occurred, and it is believed that a spread of the disease will be prevented by prompt examination of all suspects and contacts.

Personal.—Dr. Olaf K. Eggen, Minneapolis, was seriously injured in a collision between his motor-car and a police automobile, March 7.——Dr. Max Schem has resigned as medical inspector of the Minneapolis Health Department.——Dr.

Ludens, Berlin, has commenced her research work in the laboratory of Dr. Louis B. Wilson, Rochester.——Drs. J. W. Andrews, Mankato; Henry M. Bracken, Minneapolis; H. Longstreet Taylor, St. Paul; George H. Head, Minneapolis; George S. Wattam, Warren, and Dr. Edward L. Tuohy, Duluth, were appointed directors of the Health League of Minnesota, February 25.——Dr. Rudolph A. Beise, Brainerd, fell while making a professional call at Barrows, breaking his leg near the ankle.

MISSISSIPPI

Polluted Oyster Beds.—Surgeon Richard H. Creel, United States Public Health Service, after an extensive sanitary survey of the Mississippi coast, made during January, states that all the waters of the Mississippi Sound, tributary to Biloxi and Gulfport are polluted and that the oysters taken from beds in that section are unfit.

Personal.—The office of Dr. James P. Wiggins, Eupora, was destroyed by fire, February 1.——Dr. Morris J. Alexander, president of the State Board of Health, Jackson, resigned March 9.——Dr. S. Wade Glass, Dublin, has been appointed a member of the board.——Dr. Daniel W. Coker, Tunica, has been appointed physician and surgeon of the Parchman Prison Farm.——Fire at Union, March 1, destroyed a frame building owned by Dr. Oliver F. Partridge, with a loss of $10,000.

NEW YORK

Small-Pox Ban Removed.—The small-pox ban that has been enforced at Niagara Falls during January and February was removed February 24, on which date there were only sixteen cases of small-pox under quarantine. More than 20,000 persons have been vaccinated in the city.

Charities Board Asks Bond Issue.—The State Board of Charities in its report to the legislature strongly urges the issuance of about $10,000,000 state bonds for improvements and betterments in the institutions under state jurisdiction. The funds are especially desired for the development of Letchworth Village, the New York State Training School for Boys, and for the State Training School for Girls, Hudson.

Physicians Lose Suit.—The appellate court of Rochester, March 4, affirmed the opinion of Hon. Harden C. Williams, referee, dismissing the complaint of Drs. William B. Reid, George C. Reid, J. Orley Stranahan and John E. Groff, Rome, against the Oneida County Medical Society, and dismissed the temporary injunction arresting their expulsion from the society. It was held that the actions were prematurely brought.

University to Receive Park Library.—Under the will of the late Dr. Roswell Park the Medical Department of the University of Buffalo will receive his entire medical library of about three thousand volumes, including files of journals and some rare and valuable medical works. Dr. Park was much interested in the history of medicine and had been collecting old medical books for many years. This will give the university a library of more than twelve thousand volumes.

Novel Demonstration of Water Pollution.—In an action brought by an individual against certain manufacturing concerns in East Syracuse, N. Y., on account of pollution of a stream by factory waste, a bacteriologic demonstration of the water pollution was made and testified to by witnesses at the trial. The State Department of Agriculture ordered that milk from farms where cattle were permitted access to streams polluted by sewage must not be sold. The polluted stream in question runs through a large dairying section, and the suit was brought by the farmers to prevent the pollution of the stream. In order to demonstrate the contamination of the water red bacteria (*Bacillus prodigiosus*) were placed in the stream where they multiplied and were traced by the city bacteriologist of Syracuse, Dr. F. M. Meader, to a point 6,500 feet down the stream where the water containing the bacteria was drunk by a cow. It was found that the milk from the cow was colored red by bacteria. The city bacteriologist was put on the witness stand to show this fact in an attempt to prove that the typhoid bacillus might be transmitted to the milk in the same manner. This is an interesting form of animal experimentation to prove water contamination.

New York City

Dr. Bryant Seriously Ill.—Dr. Joseph D. Bryant, eminent surgeon, formerly state health commissioner, and president of the American Medical Association in 1907 and 1908, is reported to be seriously ill with diabetes at St Vincent's Hospital.

Personal.—Dr. W. Congers Herring has accepted a position as medical director of Dr. Strong's Sanitarium, Saratoga Springs.

Food Conference.—A food conference was held on the evening of March 19 at the Academy of Medicine, at which Drs. Bigelow, Mary Pennington, Graham Lusk, Mendel and others spoke. In the afternoon there was a preliminary conference on the cost of clean and wholesome food.

A New Publication.—The first number of a new publication, *Clinic Notes*, has been issued by the Association of Tuberculosis Clinics of this city. It gives a tabulated statement of the tuberculosis problem in the city and shows how the clinics are solving it. It also gives news items, health department announcements and items of general interest.

New Tuberculosis Clinic for Queens.—A clinic for the treatment of tuberculous patients has been opened at Flushing, L. I., in the district comprising Long Island City, College Point, Ridgewood, Astoria, Corona, Whitestone and Bayside. While the clinics are held only three days a week at present, it is announced that there will be a night clinic in the near future.

Reproduction of Documents.—Since the recognition of the importance of vital statistics, one of the chief obstacles to the systematic collection of facts in a large community has been the immense amount of clerical work involved. The Bureau of Records in Manhattan is solving this difficulty by utilizing photography wherever possible to perform this hitherto clerical work. The process is applicable to all documentary evidence and may have entirely unlooked-for extensions.

The Sale of Bichlorid of Mercury.—The Board of Health has adopted a resolution to the effect that no person shall sell or offer for sale bichlorid of mercury in the dry form except on prescription of a duly authorized registered physician or veterinarian, and then only in tablets of a particularly distinctive form and color, labeled POISON on each tablet and dispensed in sealed glass containers conspicuously labeled with the word POISON in red letters. This does not apply to any preparation containing one-tenth of a grain or less of bichlorid of mercury.

Passengers with Typhus.—The steamship *La Savoie*, after passing the routine examination at quarantine, landed its passengers at Ellis Island where one of the steerage passengers fainted while in line. When he was examined it was found that he had typhus fever. All of the 667 steerage passengers who had come from the ship were hustled aboard again and the 130 occupying the compartment with the typhus patient were taken to Hoffman Island for further observation; the other steerage passengers have been released.——The death of a Greek steerage passenger of typhus fever, caused the health officers to hold the steamship *Pannonia* on her arrival from the Mediterranean. More than two hundred steerage passengers were transferred to Hoffman Island.

Inoculation Reports Contradicted.—Several weeks ago some of the more sensational newspapers printed statements to the effect that forty-eight children, many of whom were attending the public schools, had been infected either through carelessness or by inoculation for experimental purposes with "loathesome diseases" in hospitals and implicated some of the most honorable members of the medical profession.

It was claimed that the statements were based on a report made by B. S. Deutsch who used the alleged results of this investigation to support the antivivisection measures that were being pressed in Albany. Dr. Sigismund S. Goldwater, the health commissioner, took up the matter and investigated the list on which Deutsch based his statements to find that of the forty addresses given on the Deutsch list, fifteen families could not be found, and in not a single child among the other twenty-five families was syphilis found; that there was no evidence of the inoculation of any of these children, and in fact twenty-four had never been patients in any hospital. Dr. Goldwater concluded in giving the results of this investigation, "Truth and antivivisectionists are utter strangers."

NORTH CAROLINA

Personal.—Dr. M. Hall Fletcher, Asheville, has been elected president of the Asheville Motor Club.——Dr. Benjamin E. Washburn, Rutherfordton, late field director of the Hookworm work in North Carolina, has been elected whole-time health officer of Nash County.——Dr. William N. Nebane, Hillsboro, has moved to Greensboro.——Dr. Samuel A. Alexander, Wilmington, has been appointed a member of the staff of the General Hospital of the Atlantic Coast Line, Waycross, Ga.

Hospital Notes.—Construction work has been begun on the Elizabeth City Hospital. The hospital is to be in the shape of a Greek cross, and is so arranged as to have sunlight in each of the fifty rooms. The sanitary equipment will be of the most modern character.——Work on the initial unit of the Mission Hospital, Asheville, will begin shortly. The building will cost $50,000, and in addition to the administration rooms, will accommodate sixty patients.——Mercy Hospital, Durham, was formally opened, March 4, and is to be a general hospital. It occupies the site of the former Corcoran Hotel, is commodious, well arranged and has been equipped in modern style. ——Drs. Andrew B. Drafts, William R. Kirk, J. Frank Cranford, Guy E. Dixon, James L. Egerton, J. Stevens Brown and William B. W. Howe are announced as the staff of the Patten Hospital, Hendersonville.

OHIO

Personal.—Dr. Florus F. Lawrence, Columbus, who is ill at his home with pneumonia, is reported to be improving.—— Dr. John B. Scott, Hamilton, is said to be in a critical condition from a cerebral hemorrhage.——Dr. Don C. Hughes, Findlay, has entered St. Vincent's Hospital, Toledo, to undergo an operation.

Cincinnati

The Tuberculosis Fight.—Surgeon Dana E. Robinson, U. S. P. H. S., arrived in Cincinnati, March 6, to make an investigation into the causes of tuberculosis in the city. The investigation is expected to take about two years.

Personal.—Dr. Daniel S. Heyn has succeeded Dr. Herbert A. Brown as workhouse physician.——Dr. J. Stewart Hagen has succeeded Dr. Archibald I. Carson as surgeon of the police and fire departments.——Dr. Oliver P. Coe and Dr. Archibald I. Carson have been appointed to assist Dr. Hagen.

Monod and Edsall Address Academy.—Dr. Gustav Monod, Paris, delivered an address before the Cincinnati Academy of Medicine on "Intestinal Disorders." By unanimous vote he was elected an honorary member of the Academy. Dr. Monod also delivered a cinemotograph lecture on "Movements of the Intestines," March 6.——Dr. David L. Edsall, of Harvard Medical School addressed the Cincinnati Academy of Medicine on "Studies in Respiration," illustrated by lantern-slides and roentgenographs.

PENNSYLVANIA

Hospital Addition.—The contract has been awarded for a three-story fireproof building for the St. Mary's Hospital at Scranton.

New Officers.—Women's Medical Society of Pittsburgh, February 24: president, Dr. Laura G. Shrom; recording-secretary, Dr. Myrtle Jack, Beechview; corresponding secretary, Dr. Anna M. Stanton.

Scarlet Fever in State Hospital.—Five cases of scarlet fever have developed at the Norristown State Hospital, and the trustees have decided to refuse admission to all visitors for twenty-one days.

Health Talks.—A health lecture will be given under the auspices of the Allegheny County Medical Society at the East Liberty Branch of the Young Men's Christian Association, March 24, by Dr. James I. Johnston, on "Cleanliness, Mental, Moral and Physical."

Trachoma at Greenville.—Seven cases of trachoma were found among the laborers in the Carnegie mills at Greenville. The Board of Health physician has communicated with Dr. Samuel G. Dixon, State Health Commissioner, and a more thorough investigation will be made under his direction.

Free Syphilitic Tests by the State.—The Bulletin of the York County (Pa.) Medical Society for March contains action by that body asking that the state shall give free Wassermann and Noguchi tests to needy patients of practitioners. The State Commissioner of Health, Dr. Samuel G. Dixon, has sent a qualified favorable response.

Vaccinate Workmen.—Dr. John J. Mullowney, Easton, assistant chief medical inspector of Pennsylvania, and Dr. Jacob L. Mowery, Lancaster, State Medical Inspector for Lancaster County, attended by two state troopers, went to Bainbridge and Billmyer, March 7, and began a wholesale vaccination of quarry workmen. About a week earlier eight cases of smallpox developed among the employees of the Wrightville Lime and Stone Company.

Personal.—Dr. W. R. Kistler, Lehighton, fell downstairs recently, fracturing several ribs.——Dr. Samuel G. Dixon, State Commissioner of Health, Harrisburg, has been appointed local physician of the Pennsylvania System.——Dr. James F. Edwards has appointed Drs. Charles F. Reif, John Conway, Alfred W. Crozier and Walter B. Orbin as medical inspectors of Pittsburgh.——Dr. George R. Moffitt has been appointed bacteriologist, chemist, meat and milk inspector of the State Health Bureau of Harrisburg.

Admission to Public Hygiene Course.—At the regular meeting of the Board of Trustees of the University of Pennsylvania held March 9, it was decided that beginning with the session 1914-15 all candidates for the degree of Doctor of Public Hygiene shall be required to have identically the same preliminary education as that now demanded of those entering on medical courses leading to the degree Doctor of Medicine; that is to say, at least two years of college work, plus a specified amount of physics, chemistry and biology.

Physicians Aid in Tuberculosis Campaign.—On March 11, in a letter to the 11,000 practicing physicians of the state, Dr. Samuel G. Dixon, State Commissioner of Health, called attention to the free treatment that the state offers to all indigent sufferers from tuberculosis, and requested them to refer all poor persons suffering from that disease to the state dispensaries, located in all of the cities and in the principal centers of population throughout the state. Three modern sanatoriums, conveniently located to every portion of the state, have been provided for those that can go away from home and a system of dispensaries for those who cannot, have been organized, and in all these treatment is absolutely free. Admission to the state sanatoriums can be obtained by application to any of the 114 dispensaries.

Philadelphia

Warn Against Raw Milk.—On March 8 the Bureau of Health and Charities issued a warning of the danger to adults of septic sore throat in raw milk. This resulted from the rule of the department to require all milk and cream brought to the city to be pasteurized.

Gift to Women's Hospital.—The alumnae of the Women's Medical College of Pennsylvania started a campaign last week to raise $500,000 additional endowment. The alumnae itself subscribed $6,500, and one of the corporators, who prefers to remain anonymous, has given $10,000.

Club Women Want Bread Wrapped.—Representatives of seven of the city's foremost and most active civic associations held a conference with Acting Director Wilson of the Bureau of Health and Charities, March 12, to obtain enforcement of state regulations requiring all food products to be kept, offered for sale and delivered to buyers only under sanitary conditions. The especial aim of these associations is that bakers be required to deliver all bread and pastry wrapped in waxed paper.

Change of Treatment of Insane.—New methods of handling cases of indigent insane persons will be established April 1, when the psychopathic ward at the Philadelphia General Hospital will be put on a different basis than in the past. The purpose of the changes will be to facilitate the admission of persons suspected of having mental disorders so that they may have the advantage of treatment without being committed as insane. All such patients will be kept under observation for thirty days, at the end of which time, if they need further attention, they may be sent to the State Hospital for the Insane, Norristown.

Housing Plan for Children.—Dr. Walter S. Cornell, chief of the school medical inspectors, presided at a conference, held at the House of Detention, March 13, whose object is the better care of defectives. Because of lack of accommodation in this part of Pennsylvania, many feeble-minded children are kept in hospital wards. Other meetings will be held to draw up comprehensive plans for presentation to the next legislature, with the idea of making the state, county and city jointly responsible for the care of such defectives. Representatives of the Juvenile Court Society for the Protection of Children from Cruelty, Children's Aid Society and the Children's Agent of the Department of Health and Charities were present at the conference.

In Honor of S. Weir Mitchell.—The College of Physicians of Philadelphia, the American Philosophical Society, the Library Company of Philadelphia, the Jefferson Medical College and the Academy of Natural Sciences announce that a meeting will be held in honor of the late Dr. S. Weir Mitchell, March 31, in the Hall of the College of Physicians at 8:15 p. m. Dr. James C. Wilson, president, is in charge of the program, and addresses will be delivered by Dr. Talcott Williams, New York

City; Dr. William H. Welch, Baltimore, and Mr. Owen Wister, Philadelphia.——At the meeting of the Board of Trustees of the University of Pennsylvania, March 9, resolutions of respect to the memory of Dr. S. Weir Mitchell, who was for many years a member of the board, were unanimously adopted.

Personal.—Dr. J. Moore Campbell has been appointed chief of the Division of Biologic Products.——Dr. Henry Sykes, for years chief resident of the Philadelphia General Hospital, is ill in the Jefferson Hospital.——Dr. Leon Jonas was elected to the Woodward Fellowship in physiologic chemistry at the last meeting of the Board of Trustees of the University of Pennsylvania.——Dr. J. William White, who is making a tour of the world with Mrs. White, was entertained by a group of University of Pennsylvania men at a dinner at Hongkong, January 23.——Acting Director Wilson of the Department of Health and Charities, on March 10 appointed Dr. William H. Walsh acting resident of the Philadelphia General Hospital. Dr. Walsh's place as superintendent of the Philadelphia Hospital for Contagious Diseases will be taken temporarily by the supervising nurse, Miss Roberta M. West. Director Wilson at the same time appointed Dr. Wilfred W. Hawke and Dr. Alfred J. Ostheimer specialists in the field of mental diseases, as committing physicians in the psychopathic ward of the Philadelphia General Hospital.——Dr. William W. Weaver has resigned as police surgeon of Philadelphia.——Dr. Ellwood R. Kirby, chief of staff of St. Mary's Hospital, is seriously ill at his home from septicemia, due to an operation wound.

SOUTH CAROLINA

Personal.—Dr. J. Austin Ball has been elected chairman and Dr. J. Merceir Green, secretary, of the Charleston Board of Health.——Dr. Charles A. Mobley, Rock Hill, has returned from New York and has opened an office in Charleston.

Pellagra Hospital Bill Defeated.—By a vote of 31 to 23 the House of Representatives of South Carolina killed the Sullivan bill providing for the establishment by the state of a hospital for the treatment of pellagra and the appointment of a commission to study the disease. The bill proposed an appropriation of $25,000 for the hospital and $10,000 for the maintenance of the commission. The bill had previously passed the Senate by a large vote.

Dr. Saunders Exonerated.—The report of the committee of the legislature, appointed to investigate into the complaints, innuendos, inquiries and charges against Dr. Eleanora B. Saunders of the State Hospital for the Insane, Columbia, shows that no evidence was found to sustain any of these charges, and that there was no intention of wrong-doing. The report was adopted by both houses of the legislature without dispute.——A handsome silver loving-cup was presented to Dr. Saunders, March 5, "by the women of Columbia as a token of their admiration for her ability, their confidence in her as a woman and their faith in her integrity of purpose and in her work."

GENERAL

Pennsylvania Physicians to Meet at Atlantic City.—The executive committee of the Pennsylvania Railway Surgeons' Association, at its meeting in Philadelphia, March 3, decided to hold its annual meeting June 19 and 20 at the St. Charles Hotel, Atlantic City.

District Society Organized.—At a meeting of the physicians of Modoc and Lassen counties, California, and Lake County, Oregon, held in Alturas on the invitation of the Modoc County Medical Society, a district medical society was organized. A banquet was given the visiting physicians by Drs. Walter E. Coppedge, John Stile and Alexander Gibson, all of Alturas.

Bureau of Labor Safety.—A bill provided for the creation of a bureau of labor safety, in the Department of Labor, was passed unanimously by the National House of Representatives, March 11. It is proposed by the bill that the bureau investigate, test and recommend the adoption of the most effective devices for reducing the hazard of various occupations. It also provides for a museum of labor-safety devices.

Bequests and Donations.—The following bequests and donations have recently been announced:

Dominican Sisters of the Sick Poor, and Little Sisters of the Poor, Brooklyn, each $5,000; St. Rose's Free Cancer Home, $1,000, by the will of Lillian C. McGovern.

Maine General Hospital, Portland, $5,000, by the will of Mrs. Annie Louise Cummings.

Goshen (Ind.) General Hospital, $2,700, by the will of Dr. J. A. Cook, Goshen.

Children's Aid Hospital, New York City, $5,000, by the will of Dr. Michael Jordan, Logansport, Ind.

Missouri Valley Physicians to Meet.—The semi-annual meeting of the Medical Society of the Missouri Valley will be held at Lincoln, Neb., March 26 and 27, under the presidency of Dr. Flavel B. Tiffany, Kansas City. The first day will be devoted to the reading of papers, and a dinner will be given by the Lancaster County Medical Society between the afternoon and evening sessions. The second day will be devoted to a clinical session at the State Orthopedic Hospital, followed by a symposium on Corneal Ulcer in the Convention Hall in the afternoon.

Typhoid from Oysters in the Canal Zone.—According to the *Canal Record*, it has been determined that a number of cases of typhoid fever under treatment in the hospital at Ancon Hospital and in Panama were due to native oysters sold in Panama. Examination of the oysters in the laboratory of the Ancon Hospital showed them to be contaminated with sewage. The health officer of Panama has issued a warning against the eating of these native oysters. The captain of the port of Panama has prohibited the placing of oysters in certain portions of the bay liable to contamination by sewage.

Civil Service Examinations.—The United States Civil Service Commission announces an open competition for medical intern for both men and women, to be held April 8. From those eligible, certification will be made to fill positions at the Washington Hospital for the Insane, Washington, D. C., with $900 a year and maintenance. Graduation from a reputable medical college is a prerequisite, and the applicant must have graduated not later than 1909, unless he has been continuously in hospital, laboratory or research work, along lines of psychiatry since graduation. The applicant must be a citizen of the United States, unmarried and 20 years of age or over, on the date of the examination. Persons who answer the requirements and desire to take this examination should apply at once to the Civil Service Department, Washington, D. C., for Form 1312.

Cancer Society to Meet.—The next meeting of the executive committee of the American Society for the Control of Cancer will be held Saturday, April 4, at 6:30 p. m., at the Hotel Martinique, Broadway and Thirty-Third Streets, New York City. Arrangements have been made for a special meeting of the society on April 10 at 8:30 p. m., at the New York Academy of Medicine. This time has been selected that those attending the meeting of the American Surgeons' Association may be present. The public is also invited. Dr. William J. Mayo, Rochester, Minn., president of the American Surgeons' Association, and Frederick L. Hoffman, LL.D., statistician of the Prudential Insurance Company, will discuss the prevalence of cancer and its control; Dr. Francis Carter Wood of the Crocker Research Laboratory will explain the investigation of cancer undertaken under the auspices of Columbia University, and Dr. J. Collins Warren, president of the Harvard Cancer Commission, will give an account of the establishment of the commission and of the research work it is directing at the Collis P. Huntington Memorial Hospital and at the Harvard Medical School.

FOREIGN

Plague Reported.—Under date of March 7, it was reported via Miami, Fla., that thirty cases of bubonic plague had been found in Havana, and that certain steamers were not allowed to dock at Key West. Subsequent reports, however, stated that all suspicious cases had been proved negative. Only one case of the disease really existed. The patient is recovering. On March 15 a second case was reported. The situation is under control.

Prevention of Accidents to the Deaf.—An organization of 600 deaf persons in Berlin recently sent the chief of police a petition regarding the use of a white band to be worn by the deaf as a sign to chauffeurs and drivers in general that the wearer is unable to hear the auto horn or shout of warning. The Berlin authorities declined to take any official steps in the matter, and the daily press is now being urged to take up the question and call for some warning sign of this kind to be worn by the deaf and be heeded by drivers as an important aid in checking the frequent street accidents to the deaf.

CANADA

Small-Pox on Ship.—Twenty-six steerage passengers of the Russian-American liner *Russia*, landing at Halifax from Lebau, March 7, were taken to the quarantine station because of a suspected case of small-pox.

Legislation against Phosphorus.—White phosphorus is the subject of a resolution submitted to the federal parliament at

Ottawa. The resolution calls for the total prohibition, manufacture and sale in Canada of matches made with white phosphorus.

Typhoid in Quebec Province.—An epidemic of mild typhoid fever prevails in the towns of Iberville and St. John's. It is said that two thousand of a population of seven thousand are suffering from the disease. Several deaths have been reported.

New Society.—The Ontario County Medical Society was established at Port Perry, Ont., March 11. Dr. F. Samuel Mellow, Port Perry, was elected president and Dr. Joseph A. McClintock, Uxbridge, secretary-treasurer. A tariff of fees was arranged.

Recommends Drastic Changes.—Dr. Séraphin Boucher, the medical officer of health of Montreal, recommends drastic changes and a complete reorganization of the whole health services of that city. Everything relating to public health and hygiene is to be brought under one department. He desires particularly to get control of water analysis, so as to publish necessary daily reports. Changes are also planned for medical inspection of schools; a library of current works and publications, additional food and contagious diseases inspectors and a better milk-supply and a thoroughly equipped statistical section.

Personals.—Dr. J. Albert Demers, Montreal, is visiting in Paris.——Dr. John Francis Teed, Dorchester, N. B., has been appointed surgeon to the Maritime penitentiary, succeeding the late Dr. Donald McDonald.——Dr. Angus W. McPherson, medical officer of health, Peterboro, Ont., has resigned.——Dr. Joseph N. Roy has returned to Montreal after spending fifteen months in Africa and South America.——Dr. Charles J. Fagan, Victoria, B. C., who for fourteen years has been medical officer of health to British Columbia, has been superannuated. ——Dr. George Harrison, Clifford, Ont., was operated on for appendicitis, February 27.

University News.—A test case is being tried by the Royal Victoria College for Women of the application of a woman graduate for admission to the faculty of medicine. The final decision rests practically with the hospitals. If the application proves successful, a number of women of the Royal Victoria College intend to take a degree in medicine after obtaining their B.A. or B.Sc.——After serving the Montreal General Hospital for thirty-one years as senior surgeon, Dr. Francis J. Shepherd tendered his resignation February 17.——Dr. Edmond M. Von Eberts has been elected to a position on the senior surgical staff.——The Hamilton (Ont.) City Hospital will receive this year from the city $158,000, with a maintenance grant of $130,885, and an additional grant of $28,000 for improvements and equipment. The latter is in addition to $125,000 recently voted for hospital improvements. The present hospital is greatly overcrowded and does not meet modern requirements, and the Ontario government has again withheld the annual grant of $7,000.——Mr. John Ross Robertson, chairman of the Board of Trustees of the Hospital for Sick Children, Toronto, points out that the Children's Hospital received from the city of Toronto $36,272. This was for fifteen months from the end of September, 1912, to the end of 1913, and not for one year, as pointed out by the mayor. The Children's Hospital has recently come in under the hospital act for Ontario, and is now on the same plane as regards civic and provincial grants as other hospitals in the province. ——Dr. William H. Hattie, who has been superintendent of the Hospital for the Insane of New Brunswick for fourteen years, has resigned and has been appointed chief health officer for the province. The assistant physician in the hospital has been advanced to the position of superintendent. Dr. Frederick E. Lawlor, Dartmouth, N. S., and Dr. E. F. Moore have been appointed assistants.——Plans have been prepared for the new General Hospital at St. John, N. B. The building will be four stories in height and have accommodation for 140 patients. It is to cost $279,000.——St. Michael's Hospital, Toronto, is again to enlarge during the coming summer; $150,000 will be spent on the new improvements, which will include a nurses' residence.——Dr. William A. G. Bauld has been appointed medical superintendent of the Montreal Maternity Hospital in succession to Dr. McEachren, who has gone to the superintendency of the Vancouver General Hospital.——The annual report of Dr. James V. Anglin, superintendent of the New Brunswick Provincial Hospital, Lancaster, shows that at the beginning of the last fiscal year 585 patients were in the institution, that 173 were admitted during the year, 56 died and 96 left the hospital, the year ending with exactly 600 patients in residence.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 27, 1914.

Medical Remuneration under the Insurance Act

The great improvement in the financial position of physicians in consequence of the insurance act has been referred to in previous letters to THE JOURNAL. Some further facts will be of interest. It appears that in populous poor districts where a large number of patients are daily hurried through physicians' offices, the effect has been in many cases to double their incomes. In wealthier areas and country districts the increase ranges from 20 to 50 per cent. In some cases physicians find it no longer worth while to see non-insured persons for 24 or 36 cents, and have raised their fees. Some attempt may be made to calculate the advantage by recalling the conditions prevailing before the act came into force. About 12,000,000 persons were to be insured, and of these about 4,500,000 were in clubs of one description or another which paid an average capitation fee of about 88 cents. The remaining 7,500,000 consisted of better-class artisans, clerks and others who paid something better than the average club rate. On the other hand, a much larger group of persons were included who received their medical attendance through the poor law, hospitals, dispensaries, etc., and spent and, indeed, could spend very little on medical attendance. At the time the act was under consideration an actuarial investigation made by the government showed that the average remuneration of physicians per head of the population was only $1 for medical attendance and drugs. Now under the insurance act over $2 is paid. The greater remuneration given by the government was stated to be justified on two grounds—that under the act physicians' work would be increased and that an improved service would be given to the poor. It is true that there has been some increase in the amount of work done, owing partly to the fact that many persons who before went to hospitals are now treated by panel doctors, and partly owing to the fact that those who were previously private patients seek medical assistance much oftener since they have become contract patients under the act. Against this must be set the fact that many insured persons prefer to resort to private doctors. The improved medical service which the government announced does not appear to have been achieved. The act defines the treatment to which the insured person is entitled as that which can be given by an ordinary physician as distinguished from a specialist. This appears to have been interpreted as the barest possible minimum, and no restriction has been placed on the number of patients which the physician may take. Instead of the service being improved, the old lodge system with all its faults has been extended. Mr. Lloyd-George has stated that for the money now available a complete national service with nurses, specialists and bacteriologic laboratories could have been provided. But, of course, in the establishment of such a system grave difficulties have to be surmounted. It is likely to come some day.

The Organization of Tropical Medicine and Hygiene in England

In 1904 an advisory committee for a tropical disease research fund was established by the Secretary of State for the Colonies. In 1912 it had an income of $16,000, toward which the imperial government contributed $5,000, the government of India $3,500, and the various dominion and colonial governments the remainder. The committee advises the government on questions affecting hygiene and pathology in tropical colonies, and receives from them reports on the diseases there prevalent. Excellent work is now being done in the laboratories in the colonies. It is proposed to increase the opportunities there for research work. As a result of the international conference on sleeping-sickness, held in London in June, 1907, and March, 1908, a central international bureau was proposed to abstract and circulate literature on sleeping-sickness, but the project fell through. The government then established a British bureau which regularly issues a bulletin containing an account of current work in field and laboratory on sleeping-sickness and other trypanosome diseases, maps of distribution, an exhaustive bibliography, and a popular pamphlet on prevention. Later bulletins on kala-azar were issued. It became evident that what was being done for sleeping-sickness could be done with advantage for tropical diseases in general, and therefore a tropical diseases bureau was formed by expansion of the sleeping-sickness bureau. It has an income of $15,000, which is provided by the imperial government and the various colonies. It publishes a tropical diseases bulletin about twice a month, the subscription to which is $5 per annum. The tropical diseases of animals are treated in a separate periodical, the *Tropical Veterinary Bulletin*. The bulletins are supplied free to medical and veterinary officers in the colonies.

Radium and Cancer

At the annual meeting of the governors of the Cancer Hospital, Mr. Charles Ryall, F. R. C. S., chairman of the medical committee, described the present position of radium treatment to cancer. He said that although a great deal had been written in the lay press of late concerning radium and the marvelous cures which it had apparently effected, radium had not come to supplant surgery in the treatment of cancer, but to aid it. Cancer was a disease which grew from day to day and eventually reached the incurable stage, and therefore for safety it must be got rid of as early as possible, and the quickest and surest means was still the knife. There were cases, however, in which operation was either inadvisable or impossible, and in these, radium and the Roentgen rays were resorted to. Radium was the most active substance known, and it was proved that it had a definite action on living cells. In cancer it had been found to exert a definite action either by destroying the cancer-cells or by retarding or preventing their growth. The properties of radium were comparatively little known, and therefore radium treatment was in the experimental stage, in which attempts were being made to fathom its effects on disease, especially cancer, to estimate its dosage, and to classify what cases were suitable for treatment by it. That would mean some years of work, and it would, therefore, be well if silence could be maintained on the subject for the next two years until some definite announcement could be made. A definite pronouncement with regard to research might be awaited with confidence, as the radium research work in this country was being carried on systematically. There was an enormous field for research and treatment among the patients at that hospital, but the workers were hampered by the inadequate quantity of radium at their disposal and their inability to procure more owing to its scarcity and enormous cost.

The Imperial Bureau of Entomology

This bureau, started a few years ago by the colonial office, is maintained by the colonial governments and is doing excellent work. During the past year it began to publish its *Review on Applied Entomology*, issued monthly in two divisions, an agricultural and a veterinary and human part. This review is an abstract of papers published in many tongues, including Russian and Japanese, and 860 articles were reviewed in the first eleven months. The bureau has also collected a complete set of laws and regulations against injurious insects of the British dominions and colonies. These will now be correlated and summarized. Some anxiety is felt with regard to the spread of yellow fever after the opening of the Panama Canal. Considerable traffic will be deflected from the yellow-fever-haunted American countries to the west of Asia, and should the *Stegomyia fasciata* be brought with it an appalling outbreak of yellow fever might occur in India. The bureau is investigating the question whether the *Stegomyia scutellaris*, a widely distributed mosquito, especially in Africa, carries yellow fever. The bureau has secured the services of Mr. W. F. Fiske, the well-known American entomologist, to carry out at the expense of the government of Nyasaland a thorough investigation into the bionomics of the tsetse-fly, *Glossina morsitans*, which conveys sleeping-sickness. The *Bulletin of Entomological Research*, which the bureau started at its first foundation, contains only records of original work.

PARIS LETTER

(*From Our Regular Correspondent*)

Paris, Feb. 27, 1914.

Death of Prof. Paul Spillmann

Dr. Spillmann, professor of clinical medicine at the Faculté de médecine de Nancy, has just died, aged 70. He became national correspondent of the Académie de médecine in 1891 and national associate in 1910. He was president and founder of the Œuvre des tuberculeux lorrains and took much interest in the campaign against tuberculosis. He also gave attention to the study of syphilis and in particular to its effects on the nervous system. He was in touch with German medical literature and translated several German works in collaboration with Dr. Haushalter. He published a Précis de diagnostic médical et d'exploration clinique

Responsibility of Physicians for Omission of Bacteriologic Examinations

The father of a family recently brought suit in the Paris court for 1,500 francs ($300) damages against a physician for omitting to make a bacteriologic examination in a case of membranous angina. The court decided in favor of the defendant on the ground that bacteriologic examination and injection of antidiphtheric serum, while considered advisable procedures by experts in cases of membranous angina, are not at present universally accepted by physicians.

Parallel between American and French Surgery

Dr. Tuffier, *agrégé* and surgeon of the Paris hospitals, made an interesting report before the Société de l'internat des hôpitaux de Paris on surgery in America, based on his recent travels in the United States. He compared French and American organization of instruction and practice of surgery. Striking differences exist in the organization of the centers of instruction and the hospitals. While in France excessive centralization produces a kind of dead level, puts a thousand hindrances in the way of individual initiative and hesitates before an experiment because it would be necessary to undertake it everywhere at once at a heavy expense, in the United States the complete autonomy and financial independence of all the centers of activity, the emulation and even the competition which animates them constantly lead to improvement and the adoption of new methods. One thing that strikes a visitor with regard to American surgery is the team work of the nurses and the assistants, who have often worked together for years. In France, on the other hand, the surgeon changes his assistant every six months. Dr. Tuffier also praises the remarkable work of the research laboratories like the Rockefeller Institute. On the other hand, he finds instruction rather insufficient. The students on leaving the universities are able to attain adequate preparation only by a sojourn in the postgraduate schools, which are, to be sure, admirably organized. In the United States the effort to obtain perfected results in certain favored circles often exceeds the desire to raise the average level of the whole medical profession. Tuffier believes, however, that in France also postgraduate instruction ought to be better organized.

Internship in the Hospitals and Foreign Students

The position of intern in the hospitals being much sought after, many students complain because foreigners are allowed to compete for internships. Having no military service to perform, foreigners have an advantage over French students. To discourage foreign students from competing for internships without having recourse to the discourteous measure of forbidding them, the following expedient has been devised: Two kinds of diplomas are awarded, the *diplome d'état*, which is a prerequisite for practice in France, and the *diplome universitaire*, which does not confer the right to practice. Foreigners most frequently content themselves with the latter. The new regulation under consideration requires the *diplome d'état* for admission to internship. A delegation representing the physicians, surgeons, obstetricians and oculists of the hospitals of Paris and composed of Professors Landouzy, Hartmann, Letulle, Delbet and others has protested against this regulation as opposed to the extension of French influence.

VIENNA LETTER

(*From Our Regular Correspondent*)

Vienna, Feb. 25, 1914.

A Patient Swallows a Tube Containing Radium

A remarkable incident, which caused some anxiety in the medical staff of our hospital, occurred recently, when a patient suffering from cancer of the tongue was treated by prolonged exposure to radium of the diseased area. Although instructed by the physician in charge of the radium department that she must not eat anything while the radium tube was in her mouth, the woman succeeded in getting some food and partook of it. When at the end of the sitting (it lasted four hours) the radium tube should have been taken out it could not be found, and the woman stoutly denied having swallowed it. She was at once examined by Roentgen ray and the presence of the valuable tube—it cost over $3,000—was easily shown. It was at that time in the small intestine of the woman, who at once was operated on. The risk of the sensitive mucous membranes of the abdominal organs suffering from the effects of the radium was too great to permit of waiting until the tube might have come out again *per vias naturales*. The tube was recovered and the patient made a complete recovery after this hazardous experience.

Warning Against the Medical Career

A most unusual action was taken a few days ago by the medical faculty of the Vienna University in order to stop the constantly increasing influx of students to the medical curriculum. This term 640 new students have taken up the study of medicine in Vienna only, the figure beating the record. The senate of the medical faculty has now issued an official warning, addressed to the parents, the teachers and the directors of schools of children between the ages of 16 and 20 years, in which it is pointed out that the medical schools of the seven Austrian universities are overcrowded with students, and that the medical profession is already now more than sufficiently supplied with new doctors for the next six years, when those entering the career this year will get their diploma of M.D. The financial outlook of the doctors is becoming constantly worse, as a large part of the population are at present obliged to enter the sick clubs, and still larger numbers will be removed from the field of the private practitioner when the new national sickness insurance bill becomes a law. At the same time the number of doctors increases proportionately faster than the population (8 per cent. against 1.5 per cent.) and the university facilities—dissecting-rooms, lecture halls and internships in hospitals—are absolutely inadequate to suffice for the numbers applying to work there. It may be noted here that the addition last year of two new dissecting-halls to the Vienna Anatomical Institute has already become inadequate owing to the sudden increase of first-year students, so that the old complaints are again raised, and in the physiologic and chemical institutes the students have to wait for days or weeks before they get their turn to work for half a day or so, apart from the difficulties of obtaining a working place in outpatient departments or wards. The warning goes on to say that if nevertheless the increase of students should continue, the medical faculty would be obliged to consider the institution of a *numerus clausus* by which only those students who come from Vienna and lower Austria would be eligible in the first line, and those coming from other districts and from foreign countries would run the risk of non-admission. Of course this does not apply to postgraduate work, although such a step would be a distinct departure from the paramount leading idea of our universities, "liberty of teaching and learning," and necessarily would be stronger than academic considerations of breach of custom. This action has caused considerable excitement among the circles affected, and it is seconded by the profession as well as by the teaching staff of our universities, as it attacks the evil at its root and gives a way to remedy it. The warning is commented on also in the lay press and in the papers devoted to the interests of schools and teachers, wherein its importance is duly pointed out.

Money for a Cancer Hospital

A sum of $120,000 has been granted recently to the "Austrian Society for Cancer Research" by an eminent philanthropist with a view to enabling the final arrangements for erecting either a special cancer ward in the General Hospital or a real cancer home. The society owns now besides this sum $400,000, so that this half millicn dollars will be sufficient for at least one hundred beds, if a separate hospital is built, and for about twice as many if an existing hospital is made use of for research purposes.

Diminution of the Height Standard for the Austro-Hungarian Army and Navy

The new recruiting law of the Austro-Hungarian forces stipulates a height of at least 152 cm. (5 feet) for men to be enlisted in the ordinary rank and file of the territorial forces or of the navy, while for those men who will work in the workshops or arsenals or in the offices as clerks, the minimum height will be 150 cm. (1 inch less than 5 feet). The former law required 155 cm. as the minimum for all persons engaged in the army and navy. Furthermore, the new requirements pay increased attention to the antecedents of the men, especially the mental history, and a history of previous epileptic attacks or mental instability will make the man ineligible for the service. In the last year, when, owing to the uncertainty of the political situation, preparations for war included the recruiting of large numbers of men from apparently underfed districts, it was noted that persons otherwise quite healthy did not reach the height limit. These would be lost if the old law should continue in force. At any rate, even with the new law, the supply of men capable for service is but sparingly drawn on, not even 1 per cent. of the population of fifty million being under arms in time of peace, while for war about 4 per cent. are available.

Marriages

Ellis William Jones, M.D., Los Angeles, Cal., to Miss Mary Elizabeth Bradley of Dubuque, Iowa, February 28.

Abdul M. Templeton, M.D., Denver, Colo., to Mrs. Nellie B. Patton of Boulder, Colo., at Berkeley, Cal., March 2.

Willis Edwards Lowry, M.D., to Alice Agnes Steffian, M.D., both of Laredo, Tex., at Elkton, Ky., March 2.

R. Sumter Griffith, M.D., Basic City, Va., to Miss M. Maggie Matthews of Afton, Va., February 18.

Blythe Rooks Sleeman, M.D., to Miss Rose Ortmann Dawson, both of Pontiac, Mich., Dec. 29, 1913.

Rafael C. Dufficy, M.D., San Rafael, Cal., to Miss Catherine Ellis of Sacramento, Cal., March 7.

John Joseph Murphy, M.D., Lima, Ohio, to Mabel Dunn, M.D., of Lincoln, Neb., at Lima, March 3.

Park Mitchell Barrett, M.D., St. Clairsville, Ohio, to Miss Irene Moyer of Reading, Pa., February 23.

Arthur Steindler, M.D., Des Moines, Iowa, to Miss Louise Junk of Waterloo, Iowa, March 1.

Fred D. Vickers, M.D., to Mrs. Charles A. Leach, both of Deming, N. M., February 22.

Deaths

Thomas Morgan Rotch, M.D. Harvard Medical School, 1874; a Fellow of the American Medical Association; a pediatrician of international fame; died at his home in Boston, March 9, aged 64. In 1878 he was made lecturer on diseases of children in his Alma Mater; ten years later was made assistant professor of diseases of children and after five years was made full professor, and since 1903 has been professor of pediatrics. He served as secretary of the Suffolk District Medical Society from 1878 to 1902. He also had been president of the Association of American Physicians. He was the author of textbooks on "Pediatrics" and on "The Roentgen Ray in Pediatrics."

William Bass, M.D. Worcester (Mass.) Medical College, 1856; a member of the Massachusetts Medical Society and councillor for 1879 to 1881, and from 1886 to 1889; formerly vice-president of the Middlesex North District Medical Society, and president of the Medical Journal Society of Lowell; assistant surgeon of the Sixth Massachusetts Volunteer Infantry during the Civil War; in 1873 a member of the common council of Lowell; a member of the medical advisory board of the Lowell General Hospital since its organization; died at his home, February 27, from pneumonia, aged 81.

Paul A. Hartmann, M.D. Jefferson Medical College, 1874; a Fellow of the American Medical Association; formerly president and for 30 years secretary of the Dauphin County Medical Society; once president of the Harrisburg Academy of Medicine; a member of the Harrisburg city council and school board; medical inspector of the State Board of Health, and in charge of the State Tuberculosis Dispensary since its organization; pathologist to the Harrisburg Hospital; for several years state prison physician; died at his home in Harrisburg, March 1, from edema of the brain, aged 63.

William Laville Robinson, M.D. University of Virginia, Charlottesville, 1868; a Confederate veteran; once president of the Medical Society of Virginia; president of the Danville board of health; formerly vice-president of the Southern Surgical and Gynecological Association; president of the Tri-State Medical Association of the Carolinas and Virginia, and Danville Academy of Medicine; died at his home in Danville, Va., March 1, from heart disease, aged 69.

Samuel Rush Sayers, M.D. University of Pennsylvania, Philadelphia, 1855; surgeon in the Confederate service during the Civil War, and attached to the Stonewall Brigade; for three terms a member of the Virginia State Legislature from Wythe County; president of the First National Bank of Wytheville; died at his home in that city, February 23, aged 80.

Charles Hill, M.D. Rush Medical College, 1857; a Fellow of the American Medical Association; one of the organizers of the Minnesota State Medical Association, and formerly state senator; died at his home in Pine Island, Minn., March 3, from pneumonia, aged 85.

Charles Gentsch, M.D. Georgetown University, Washington, D. C., 1873; a Fellow of the American Medical Association; president of the Public Library Board of Cleveland for several years; a veteran of the Civil War; a director of several local banks and manufacturing companies; died at his home in Cleveland, March 5, two months after a surgical operation, aged 72.

Albert Parke Good, M.D. Jefferson Medical College, 1894; a Fellow of the American Medical Association; assistant chief of the neurologic clinic in his Alma Mater, and of the ear, nose and throat clinic of the Medico-Chirurgical College of Philadelphia; died suddenly at his home in Philadelphia, March 5, from heart disease, aged 46.

John R. Whitesides, M.D. St. Louis Medical College, 1875; formerly a Fellow of the American Medical Association; a member of the Arizona Medical Association; superintendent of health of Mohave County, and local surgeon of the Santa Fe system at Kingman; died at Albuquerque, N. M., March 7, from tuberculosis, aged 63.

Henry Tucker Harrison, M.D. University of Maryland, Baltimore, 1874; a member of the Medico-Chirurgical Faculty of Maryland; resident physician of the Maryland School for Boys, Loch Raven; a Confederate veteran; died at his home, Cub Hill, Baltimore County, Maryland, March 4, from pneumonia, aged 69.

Benjamin J. Mayer, M.D. Miami Medical College, Cincinnati, 1885; for ten years sporting editor of the Cincinnati *Enquirer;* well known as a patron of sports; press-agent for the last five years of the Heuck Opera House Company; died at his home in Cincinnati, March 5, from pleural pneumonia, aged 49.

William Thomas Hendon, M.D. University of Alabama, Mobile, 1898; a member of the Medical Association of the State of Alabama; for a year after graduation in the employ of the United States government in South America; died at his home in Ensley, March 4, aged 36.

Joseph Michael O'Malley, M.D. University of Georgetown, Washington, D. C., 1893; a member of the Medical Society of the State of Pennsylvania, and chief-of-staff of St. Agnes' Hospital, Philadelphia, for fifteen years; died in that institution March 3, from nephritis, aged 48.

Robert B. Grammer, M.D. Louisville (Ky.) Medical College, 1883; a member of the Texas State Medical Association; professor of the diseases of children in Fort Worth University; visiting physician to St. Joseph's Infirmary; died at his home in Fort Worth, March 1, aged 52.

Frank Sargent Grant, M.D. College of Physicians and Surgeons, New York City, 1875; for many years chief medical examiner for the Equitable Life Assurance Society and Penn Mutual Insurance Company; died at his home in New York City, March 1, aged 52.

William Bailey Williams, M.D. University of Nashville, Tenn., 1869; formerly of Harriman, Tenn.; a member of the Tennessee Pharmaceutical Association; died at his home in Chattanooga, Tenn., January 30, from empyema following pleurisy, aged 52.

Wellington Locke, M.D. Tulane University, New Orleans, 1909; (license, Miss., 1907); a member of the Mississippi State Medical Association; of Carriere; died suddenly in McNeil, Miss., March 5, from cerebral hemorrhage, aged 41.

John Owen Stow, M.D. University of Colorado, Boulder, 1909; formerly of Gold Hill, Colo; died at the home of relatives in Chesaning, Mich., January 15, from carcinoma of the superior maxilla, aged 32.

Randell McGinley Alexander (license, Franklin County, Pa., 1881); a practitioner of Fannettsburg since 1870; died at the home of his son in Klein, Mont., February 24, from pneumonia, aged 70.

James H. Binns (license, W. Va., years of practice, 1881); a practitioner of Marion County for forty-six years; a veteran of the Civil War; died at his home in Fairmont, February 28, aged 76.

Samuel H. Sparhawk, M.D. Homeopathic Hospital College, Cleveland, 1865; a veteran of the Civil War; died at his home in St. Johnsbury, Vt., March 3, from cerebral hemorrhage, aged 73.

Victor Elmer Hitch, M.D. Jefferson Medical College, 1896; a member of the Nevada State Medical Association; died at his home in Reno, March 7, from edema of the brain, aged 41.

Jonathan M. Bell, M.D. St. Louis College of Physicians and Surgeons, 1864; a member of the State Medical Association of Texas; died at his home in Wichita Falls, February 4, aged 52.

James Columbus Cousins, M.D. Baltimore University, 1891; a member of the Medical Association of the State of Alabama; died at his home in Equality, February 27, from heart disease.

Edmund Brooks Alexander, M.D. University of Pennsylvania, Philadelphia, 1894; of Los Angeles; was accidentally drowned while bathing at Hermosa Beach, Cal., February 16, aged 44.

Eugene S. Head, M.D. Hospital College of Medicine, Louisville, 1882; formerly physician of Macoupin County, Ill.; died at his home in Carlinville, about February 24, aged 59.

William B. Moore, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881; of Eatonton, Ga.; died at the home of his sister in Macon, February 25, aged 58.

J. Emile Bernard, M.D. Laval University, Quebec, 1909; of Point St. Charles, Montreal; died in Notre Dame Hospital in that city, Dec. 1, 1913, from appendicitis, aged 32.

John Pringle, M.D. University of Glasgow, Scotland, 1875; president of the East Newark, N. J., Board of Health; died at his home, February 25, from pneumonia, aged 68.

John Burke Freeman (license, Mo., 1883); at one time a member of the Missouri legislature from Livingston County; died at his home in Sturgis, about February 24.

Theodore Dwight Williams, M.D. Hahnemann Medical College, Chicago, 1871; died at his home in Geneva, Ill., February 27, from cerebral hemorrhage, aged 71.

Philip V. Miller, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1879; died at the home of his sister-in-law in Keokuk, March 2, from bronchitis, aged 60.

Ephraim Winfred Spitler, M.D. Medical College of Ohio, Cincinnati, 1885; died suddenly at his home in West Milton, Ohio, March 1, from heart disease, aged 54.

Anna Sarah Marlin Cornwall, M.D. Tufts Medical College, Boston, 1906; a member of the Massachusetts Medical Society; died at her home in Brookline, March 1.

H. Wood, who retired from practice in Mississippi twenty-five years ago; died at his home in Hazelhurst, Miss., January 12, from angina pectoris, aged 64.

Clemens Fulda, M.D. New York University, New York City, 1879; died at his home in Greenport, Brooklyn, N. Y., February 26, from heart disease, aged 65.

Edward Daniel Gottschalk, M.D. St. Louis University, 1906 of Woodriver, Ill.; died in St. Joseph's Hospital, Alton, February 26, from pneumonia, aged 34.

David Emmett Proctor, M.D. University of Louisville, 1893; of Stanford, Ky.; died in the Norton Infirmary, Louisville, February 23, from uremia, aged 44.

William F. Endlich, M.D. Jefferson Medical College, 1885; a practitioner and dentist of Philadelphia; died at his home in that city, February 27, aged 55.

Isaac E. Bennett, M.D. University of Buffalo (N.Y.), 1872; for fourteen years township supervisor; died at his home in Plano, Ill., February 19, aged 66.

Frederick Eri Barrows, M.D. New York University, New York City, 1876; died at his home in Clinton, N. Y., January 9, from chronic bronchitis, aged 64.

Francis Martin Burke, M.D. New York University, New York City, 1890; died at his home in Flatbush, Brooklyn, N. Y., March 3, from diabetes, aged 53.

William F. White, M.D. Pulte Medical College, Cincinnati, 1877; died at his home in Marysville, Ohio, February 28, from heart disease, aged 57.

Stanley Vincent, M.D. New York Homeopathic Medical College, New York City, 1879; died at his home in Catskill, N. Y.; February 24, aged 57.

William Tyler Ramsey, M.D. George Washington University, Washington, D. C., 1871; died at his home in Cambridge, Ohio, January 19, aged 66.

Mary Quayle Mathews, M.D. Hering Medical College, Chicago, 1905; died at her home in Chicago, February 25, from kidney disease.

Alexander C. Mackey, M.D. Baylor University, Dallas, Tex., 1904; died at his home in Dallas, January 9, from acute gastritis, aged 37.

James M. Keesor, M.D. University of Louisville, 1893; died at his home in Woodsfield, Ohio, March 2, from pneumonia, aged 46.

Lewis Thomas Lunn, M.D. Jefferson Medical College, 1856; died at his home in Reynoldsburg, Ohio, February 28, aged 84.

John Warren King, M.D. Jefferson Medical College, 1875; died at his home in Vicksburg, Miss., February 26.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

CITROLAX

Trade names which give a misleading impression as to the constituents of the substance involved constitute an especially pernicious form of nostrum activity. The extensive newspaper advertisements of a preparation called "Citrolax" have brought it to the attention of the Association laboratory. From the name of the substance and from various statements and implications in the advertising matter, the purchaser is led to believe that it is magnesium citrate in tablet form and superior to the standard solution of citrate of magnesia.

A tablet taken from a trade package, when placed in a glass of water, according to directions on the carton, yielded a milky solution. As citrate of magnesia is completely soluble in water, the presence of insoluble matter in the tablet aroused suspicion. To determine the nature of this insoluble matter, the tablets were examined by our chemists who report:

LABORATORY REPORT

Two sets of specimens were therefore purchased for investigation. The first were labeled "Citrolax—The Lemonade Laxative—Made and guaranteed by the Citrolax Company of America—Chicago." The second, purchased three weeks later, were labeled "Citrolax—The Effervescent Laxative—Tastes like Lemonade—Prepared only by Foley and Co., Chicago." The probability is that the party who first put it on the market has sold it to the second, the Foley people. The tablets measure about 1¼ inches in diameter by about ½ inch in thickness; they are sold in 10-cent, 25-cent and 50-cent packages, containing respectively one tablet, three tablets and eight tablets each.

When placed in water Citrolax tablets effervesced with liberation of carbon dioxid and dissolved, with the exception of a small amount of a fine whitish powder, giving the solution a turbid appearance. The solution responded to tests for magnesium, sodium and citrate; the presence of potassium or tartrate could not be demonstrated. The insoluble matter was found to be organic, soluble in alcohol and to dissolve in alkaline solutions with formation of a bright red color, which disappeared on acidification and reappeared on being made alkaline. Further tests identified this substance as phenolphthalein. Quantitative determinations of the phenolphthalein resulted as follows:

Tablets from packages labeled "The Citrolax Company of America" averaged 10 gm. in weight and contained an average of 2.4 per cent. phenolphthalein, or about 0.24 gm. per tablet.

Tablets from packages labeled "Foley and Co., Chicago" weighed about 11 gm. each and contained an average of 2.1 per cent. of phenolphthalein, or about 0.231 gm. per tablet.

The advertisements, as has been mentioned, would lead one to believe that the tablets are a form of magnesium citrate. The chemical examination shows that each tablet contains 3½ grains of phenolphthalein, or more than an average dose of this drug.

PRINTERS' INK AGREES

A few weeks ago we published a letter written from the advertising department of *Lippincott's Magazine* in reply to a protest made by a physician against some of the advertising carried by that publication. The opinions expressed by The Journal seem to be shared by that always interesting little "journal for advertisers," *Printers' Ink*, which in its "Little Schoolmaster's Classroom" department for February 26 says:

"The Journal of the American Medical Association publishes a letter from a very high-grade publication in which the latter asserts that it dare not refuse to run doubtful advertising, because the advertiser may sue it for damages. The Schoolmaster is surprised to find that the idea still persists that publications are, in some sense, common carriers. No publisher is obliged to accept any advertising at all (some of them don't), and every publication has the simple, common-law right to do business with whom it pleases. Of course that does not include the right to make indiscriminate accusations of fraud, but it isn't necessary to make any accusations at all in order to refuse business. The simple statement that 'we do not care to accept it' is enough."

UNITED DOCTORS — A NEWS ITEM

"A constable sale of the personal effects of the United Doctors who maintained offices for a time in the Montgomery Block, corner of Second Street and Western Avenue, took place this morning under the direction of Constable William Nelson. The sale was to satisfy a claim of $150 for rent which Mrs. Fannie T. Montgomery had against the physicians."—Muskegon (Mich.) *Chronicle.*

The preceding item would have a familiar sound to landlords, newspapers and others in various towns where the United Doctors formerly held forth, as in Springfield, Marion and Newark, Ohio. Among the great "Specialists" who supplied the Muskegon office of the United Doctors during its brief career were A. E. Weed, Harold K. Bryant and Samuel Cushing Beach; the last-mentioned was formerly of the Port Huron, Mich., office, whose history is set forth in the pamphlet[1] on "Quacks, Itinerant and Otherwise."

THOXOS

Thoxos is a "specialty" of John Wyeth and Brother. From an advertising circular we learn that it "offers to the physician a rational treatment for Rheumatism, both the Subacute and Chronic forms, Lithemia, Rheumatic Arthritis, Gout, Sciatica and the various manifestations of uric diathesis," and that "It is a palatable solution of Strontium and Lithium soluble salts, thirty-two grains, combined with twenty-four minims Wine of Colchicum Seed and a vegetable alterative, in each fluidounce, flavored with aromatics." This "formula" does not indicate the acid with which the metals strontium and lithium are combined, or what the "vegetable alterative" is; it is essentially a secret preparation. To learn what the missing and presumably active ingredients are an analysis was made by our chemists.

LABORATORY REPORT

One original bottle of Thoxos, John Wyeth and Brother, Philadelphia, was purchased and submitted to analysis. The bottle contained a brown liquid having an aromatic odor and a sweet taste. The specific gravity of the liquid was 1.118 at 15 C. (60 F.). The solution was acid to litmus. Qualitatively the following constituents were detected: strontium, potassium, sodium, lithium, ammonium, salicylate, iodid, glycerin, alkaloid, alcohol and water. By the smell and taste, oil of wintergreen, or methyl salicylate, and oil of sassafras were recognized. Positive tests for a saponin-like body indicated the probable presence of sarsaparilla.

Quantitatively the following results were obtained:

Ammonia (NH_3)	0.006	per cent.
Lithium (Li)	0.04	per cent.
Potassium (K)	0.13	per cent.
Sodium (Na)	0.03	per cent.
Strontium (Sr.)	1.03	per cent.
Iodid (I)	0.46	per cent.
Salicylate ($C_6H_4.OH.COO$)	4.19	per cent.
Glycerin	19.2	per cent.

From the analytic results it would appear that the preparation contains approximately potassium iodid, 0.67 gm. per hundred c.c., or 3 grains per fluidounce, lithium salicylate [$Li(C_7H_5O_3)$], 0.9 gm. per hundred c.c., or 4 grains per fluidounce, strontium salicylate [$Sr(C_7H_5O_3)_2.2H_2O$], 5.75 gm. per hundred c.c., or 26 grains per fluidounce, and some salicylic acid combined with sodium and also in the free state. The total salicylate found is equal to 5.47 gm. of sodium salicylate per hundred c.c., or 25 grains per fluidounce.

As strontium salicylate and lithium salicylate are now generally considered to differ but slightly, if at all, in their action from that of sodium salicylate, each dose of Thoxos, 1 teaspoonful or 4 c.c., may be considered the equivalent of 0.2 gm. or 3 grains of sodium salicylate with a fractional dose of colchicum. Hence this nostrum — for this is the correct definition—is a mixture of no more value than a prescription of sodium salicylate with a fractional dose of potassium iodid and colchicum; one that any doctor could write and any druggist dispense. Yet it is doubtless prescribed by physicians under the belief that it possesses some occult power not to be found in ordinary drugs and their combinations. To prescribe Thoxos is to prescribe a name, and the patient who takes it would be as well off if he went to the nearest drug store and purchased a bottle of any of the thousand and one rheumatism cures with which the country is flooded.

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[1] Price, 4 cents.

Correspondence

A National Medical Examining Board

To the Editor:—I should like to make a few suggestions on the question of a national medical examining board, the establishment of which was proposed recently by Lieutenant-Colonel Kean before the Federation of State Medical Examining Boards (The Journal, March 7, 1914, p. 804). The holding of the license of the national board should be made obligatory in the future on those seeking commissions in the Medical Corps and the Medical Reserve Corps of the U. S. Army and of the U. S. Navy and in the U. S. Public Health Service, and should be required of all who wish to hold any other medical position under the federal government. The license should also qualify the holder to the right to practice in the District of Columbia, the territories, insular possessions and all other places under the exclusive jurisdiction of the federal government. No doubt in a short time the majority of the states would register a medical man who held such a license.

H. M. Manning, M.D., Washington, D. C.,
Passed Assistant Surgeon, U. S. Public Health Service.

Baiting the Doctor?

To the Editor:—During the past week, a number of physicians of Monmouth have been visited by a man giving the name of N. P. James and claiming to live in Chicago. He gave a different story at each office visited. For example, he told me that he would be married in Chicago this week, but owing to the fact that his prospective father-in-law was a "eugenics crank" it was necessary that he present a clean bill of health before marrying the daughter. He claims to be a traveling salesman, and having a few hours to kill here decided to have the examination here. I made a careful examination of the prostatic secretions, staining for the Neisser coccus, and also making a microscopic urinalysis, staining the sediment obtained by centrifugation, and received a negative result in each instance. I told him that this would not prove the entire absence of either syphilis or gonorrhea, advised him to read the book "Damaged Goods," and told him, further, what I thought of a man who would intentionally deceive an innocent girl through a medical report, as it was not always possible by such examinations to tell positively the presence or entire absence of venereal diseases. I told him of the Wassermann test for syphilis, and the complement-fixation test, and advised him to have those tests made if he suspected disease. He informed me that he had never had any venereal diseases whatsoever. On paying my charges he asked for a receipt and also a statement regarding my examinations, and the results obtained. This I gave, stating the nature of the examinations, but did not say he was free from disease.

The same day he visited another physician here, saying that he had had a gonorrheal infection with considerable burning and asked the physician to prescribe for the burning particularly. This was done, and on paying the bill, he asked for a receipt.

To another physician he told the eugenic story and asked for an examination. This physician told him he did not believe it was possible for him to say positively whether there was anything of a venereal nature present, for it was not easy in the absence of the blood-tests to tell if a man had such conditions. He gave some advice and also gave a *receipt for the amount paid. To another physician,* "Mr. James" asked for gonorrheal treatment, giving a few of the usual symptoms, and again asked for a receipt.

I do not know how many similar calls he has made or, on the other hand, the object; but I can readily imagine that the recent exposure of quacks has something to do with his visits, and as others may have had similar visits, or will have them, I thought it advisable to write to you, as the story may be interesting to others.

H. M. Camp, M.D., Monmouth, Ill.

[Comment.—This letter is one of several that we have received. See The Journal, March 14, 1914, p. 862, and Feb. 28, 1914, p. 716.—Ed.]

Ninhydrin Reaction of Urine

To the Editor:—I wish to refer to the article on "Presence of Dialyzable Products Reacting to Abderhalden's Ninhydrin in the Urine of Pregnant Women," by Louis M. Warfield (The Journal, Feb. 7, 1914, p. 436).

It is quite evident that serious mistakes have been made by the author, as it has long been known by all students of urinalysis that the urine contains amino-acids, which are generally grouped with other substances as "undetermined nitrogen" when speaking of the nitrogenous contents of the urine. These amino-acids may arise from dietetic causes or from processes of catabolism, normal or perverted.

A number of months ago I made a series of experiments on the reaction on urine from various sources with ninhydrin and found that a positive reaction was the rule. It made no difference whether the urine was from a case of pregnancy or from a non-pregnant female or from a male individual. It is true that in a few cases a negative reaction with ninhydrin is obtained, but this does not prove the absence of amino-acids. The ninhydrin reaction is easily influenced by the presence of other substances in solution, and we attribute our failure to obtain the reaction in some cases more to the fact that substances inhibiting a positive test were present in the urine than to the absence of amino-acids.

In the accompanying table are given the results of tests of a few urines, all from male individuals, which according to Warfield, would indicate pregnancy.

TESTS OF URINE WITH NINHYDRIN

						Ninhydrin Reaction	
No.	Time After Meal Hrs.	Reaction	Specific Gravity	Albumin	Peptone	Of Centrifuged Urine	Of Dialysate
1	4	Acid	1.025	—	—	+	+
2	*	Acid	1.015	—	—	+	+
3	4	Alk.†	1.019	—	—	+	+
4	5	Acid	1.031	+‡	—	+	+
5	1	Acid	1.025	—	—	+	+

* Immediately after meal.

† Carbonates and phosphates present on voiding; reaction more of pinkish cast.

‡ Case of orthostatic albuminuria.

It will be noticed that the alkalinity of Urine 3 interfered with the reaction to some extent, but did not entirely obliterate it. I have found cases in which the reaction was entirely obliterated, because of ingestion of certain drugs.

If proteins are absent from the urine, it is not necessary to use a dialyzer to demonstrate the presence of dialyzable substances reacting with ninhydrin, as the smaller fragments of the protein molecule which react with ninhydrin are all dialyzable.

I would urge that great care be used in making tests and reporting results with the Abderhalden technic. Much confusion has already resulted from incorrect or insufficiently controlled work. In research so far, I have found that the ninhydrin test is quite reliable for pregnancy diagnoses and promises to be of value for the diagnosis of carcinoma, provided a homologous substrate is used in making the tests, and that it is of promise in the investigation of insanity.

Charles E. M. Fischer, M.D., Chicago.

Priority in the Adoption of Higher Entrance Requirements

To the Editor:—In Dean R. H. Whitehead's article (The Journal, March 14, 1914, p. 826), the following statement is made:

"When, in 1906, the faculty of the school which I serve [the University of Virginia] decided to require thereafter a year of college work in the basic sciences preliminary to medicine, there was *not a school in the entire East between* Canada and Mexico, with the exception of Harvard and Johns Hopkins, which required any amount of college work for admission."

This is quite true of the extreme East, but it might have been added that while Johns Hopkins has required a collegiate degree since 1893 and Harvard since 1900, Western Reserve has required three years of a college course since 1901, the University of Chicago two years since 1904, and the University of California has made the same requirement since 1905, while the University of Minnesota has required one year since 1902 and two years since 1907. In view of the splendid work done by the Carnegie Foundation and the Council on Education of the A. M. A., we are apt to forget the sacrifices by the above-named six institutions, which made the subsequent work for educational reform possible.

W. W. Root, M.D., Slaterville Springs, N. Y.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. *Every letter must contain the writer's name and* address, but these will be omitted, on request.

IODIN TREATMENT OF GOITER

To the Editor:—1. Is the iodin treatment for goiter considered successful, and if so, to what extent?

2. How is it best given and how often?

3. Where can I obtain literature on it?

F. M. Postlethwaite, M.D., Glen Elder, Kan.

Answer.—1. Iodin is a recognized treatment in certain forms of goiter. As a rule it is contra-indicated in exophthalmic goiter and in old goiters of the fibroid and colloid varieties. The cases in which it may be useful are often best determined by a cautious trial. If, after using it for one or two weeks, no improvement is noted, the case is probably one to which the remedy is not suited.

2. It is best given in the form of iodid internally. The doses should be small to begin with and can be cautiously increased. Too large doses may cause the development of exophthalmic goiter. It may be given three times daily.

3. Late text-books on pharmacology and on medicine should be consulted. The following are recent articles on the subject:

Marine, D.: Anatomic and Physiologic Effects of Iodin on the Thyroid of Exophthalmic Goiter, The Journal, Aug. 3, 1912, p. 325.

Pulawski, A.: Iodin and Thyroid Extract as Factors in Exophthalmic Goiter, *Med. Klin.*, 1912, viii, 1181; abstr., The Journal, Sept. 21, 1912, p. 975.

ARTICLES ON MUNICIPAL HEALTH

To the Editor:—Please give references to articles on the subject of preventable diseases from the point of view of city sanitation, to be used in preparing a paper for delivery before our mayor and city council. O. S. Jacquith, M.D., Lawrenceburg, Ind.

Answer.—Following is a list of references to literature on this subject:

Lumsden, L. L.: What the Mayor and City Council Can Do in the Prevention of Typhoid Fever, reprint from *Pub. Health Rep.*, June 17, 1910.

Bennett, H. C.: Cleaning Up the American City: How Mrs. Caroline Crane Does It, *American Magazine*, September, 1913.

Smoking on Street-Cars, Current Comment, The Journal, Feb. 14, 1913, p. 544.

Lewinski-Corwin, H., and Mayo, E. W.: The Control of Disease. *Outlook*, Sept. 6, 1913.

Dutton, W. F.: Sanitary Control of Public Eating- and Drinking-Places: Its Regulation by Law, *Scient. Am. Supplement*, Dec. 28, 1912.

Harrington, Thomas F.: Prevention of Disease versus Cost of Living, The Journal, June 7, 1913, p. 1757.

Thompson, Cyrus: Waste, *North Carolina State Board of Health Bulletin*, April, 1912.

Stimson, A. M.: The Citizen and the Public Health, Supplement No. 4, *Pub. Health Rep.*, Feb. 28, 1913.

Lederle, E. J.: Sanitary Control of Local Milk-Supplies Through Local Official Agencies, *Med. Rec.*, New York, Dec. 14, 1912.

Riddle, J.: Public Housekeeping With Reference to Sanitation, *Wisconsin Med. Jour.*, January, 1913.

O'Farrell, J. M.: Public Health is Public Wealth, *Texas State Jour. Med.*, February, 1913.

Menefee, A. V.: What a Busy Practitioner Can Do to Educate Public in Prevention of Disease, *Kentucky Med. Jour.*, Oct. 15, 1913.

Kiefer, Guy L.: Progress in Public Health Work, The Journal, Nov. 8, 1913, p. 1680.

A City's Investigation of Its Public Health, Medical Economics, The Journal, Nov. 29, 1913, p. 2004.

Palmer, G. T.: Diagnosis of Sick City, *Am. Jour. Pub. Health*, July, 1913.

Egleston, W.: Sanitation in Small Towns, *Old Dominion Jour. Med. and Surg.*, July, 1913.

Porter, S. D.: Legislation, State and Local: What It May Accomplish for Sanitation, *New Orleans Med. and Surg. Jour.*, August, 1913.

ADMINISTRATION OF CALCIUM

To the Editor:—If calcium is needed in the body it is usually due to the fact that calcium has been taken from it. Lactic acid is the chief agent in removing lime from the body. It is produced by bacterial agency or effect on inosite, glucose and other sugars as well as in the ordinary metabolism of glucose. Lactic acid will extract lime from tendons and ligaments, causing them to become swollen, and also from the nuclei of cells, causing their destruction. Therefore, it would seem that to administer calcium in the form of lactate would not be good practice. I have found that an admirable way of administering calcium is to give calcium salicylate in 10-grain doses in carbonated water.

T. W. Jenkins, M.D., Albany, N. Y.

Answer.—It does not seem probable that the objection, made by our correspondent, would apply in the case of lactate of calcium administered as a remedy. The absorption or solution of calcium in the body is probably brought about in a medium that is slightly acid. The lactate of calcium, however, is a neutral salt which could have no influence in rendering other forms of calcium soluble. From what we know of metabolic processes, it is probable that calcium lactate undergoes oxidation with the production of calcium carbonate. It is denied by some investigators that the administration of lactic acid will affect the amount of calcium in the bones. Experimental investigation has shown that the bones may become softened by the ingestion of dilute sulphuric acid, which would seem to indicate that the effect is due to the permanence and strength of the acid reaction rather than to the particular acid used. Calcium salicylate would give active effects of salicylic acid, which might be undesirable.

BOOKS ON ALKALOIDS AND GLUCOSIDS

To the Editor:—Please give me reference to literature on the chemical properties, separation and analysis of the alkaloids and glucosids. A text-book on this subject would be very welcome, if I knew of one.

E. A. Peterson, M.D., Mobile, Ala.

Answer.—In general, information in regard to the properties, separation and estimation of alkaloids is scattered through rather recent current literature. Perhaps the best single book to use is A. H. Allen's "Commercial Organic Analysis," Vol. vii, Philadelphia, P. Blakiston's Son & Co., 1913. A short discussion of the method of estimating alkaloids is represented by Korczynski, "Die Methoden der exakten quantitativen Bestimmung der Alkaloide," Berlin, Verlag Gebrüder Borntraeger, 1913. A book written by A. B. Lyons, Detroit, on the estimation of alkaloid was a standard work some years ago, but we cannot give its publishers.

STATUS OF RADIUM

To the Editor:—I have recently received several circulars from the Radium Chemical Company, Forbes and Meyran avenues, Pittsburgh, Pa., which seems to be introducing radium drinking-water, radium bath-water, radio-active earth for external applications, radium compresses, and radium in ampules for intravenous injection.

The company and its methods are new to me and I should be glad if you have any information *on the subject to give to the profession*, especially in regard to the efficacy of radio-active water and radium baths, of which the newspapers are saying so much of late and which I find are being adopted by some members of the profession.

William H. Van den Burg, M.D., New York.

Answer.—Radium is still on trial in all its forms. Water containing radium emanations is presumably radio-active and may produce the milder effects of radium on the animal organism; but it must still be held as undemonstrated that these effects are of value in the treatment of constitutional diseases. While some clinical evidence has been introduced to show a favorable effect from these preparations, the interpretation of such evidence is always beset with difficulties; it is hard to separate the improvement which arises from psychic influences from that which rests on an objective basis.

It is notable that the conditions in which radium emanations are used, such as rheumatism, are liable to psychic impressions and are readily influenced by new forms of treatment which later lose their beneficial influence.

TRAINING OF LEFT-HANDED CHILDREN

To the Editor:—Is it wise to attempt to change left-handed children to right-handed ones?

Frank W. Morse, M.D., Canton, Maine.

Answer.—Left-handedness appears to be hereditary in a large proportion of cases, and it does not seem wise to attempt to change the condition. According to Dr. Schäfer, who investigated left-handedness among the Berlin schoolchildren, heredity was recognizable in 60 per cent. Consequently over 9,000 children are being trained contrary to their natural inclination, and this to their detriment as is shown by their writing, drawing and handwork. In his opinion, the left hand should not be left untrained in left-handed children but should be held as of the same importance in education as the right hand among the right-handed. (See Berlin Letter, The Journal, Oct. 26, p. 1554.) Other references are:

Voelckel, E.: Right-Handedness in Infants, *Ztschr. f. Kinderh.*, 1913, viii, No. 4; abstr., The Journal, Sept. 27, 1913, p. 1083.
Brüning, A.: Test for Left-Handedness, *München. med. Wchnschr.*, Dec. 5, 1911.
Left-Handedness in the German Army, Berlin Letter, The Journal, June 15, 1912, p. 1869.

MANUFACTURE OF NITROGEN

To the Editor:—1. Please give correct proportions for producing nitrogen by the action of potassium hydroxid and pyrogallic acid on air.

2. Is there any guide as to when the solution has become untrustworthy?

3. Some authorities state that strong solutions in the presence of oxygen may evolve carbon monoxid. Is this true?

4. Where can one obtain pure nitrogen in bombs or containers for use in Murphy's method of artificial pneumothorax?

J. L. Pomeroy, M.D., Monrovia, Cal.

Answer.—1. Five gm. of pyrogallol are dissolved in 15 c.c. of water, and 120 gm. of potassium hydroxid are dissolved in 80 c.c. of water. The two solutions are kept separate and mixed immediately before use. If the mixed solution is not used at once it must be kept out of contact with the air. This quantity of solution will dissolve about 1 liter of oxygen or will dissolve the oxygen from about 4 to 5 liters of air.

2. There is no way of determining when the solution has become ineffective except to test for oxygen in the treated gases. The most satisfactory method is to prepare only as much of the alkaline pyrogallol solution as is needed for one absorption, and discard it after use.

3. It is stated that solutions of the strength given above do not produce carbon monoxid, as the large excess of potassium hydroxid is said to prevent the formation of this substance. Because of the high cost of the materials this method is not used for the commercial production of nitrogen.

4. Nitrogen gas in containers may be obtained of the Chicago Oxygen Gas Company, 1742 West Madison Street, Chicago, from the Linde Air Products Company, Forty-Second Street Building, New York City, and elsewhere.

ARTICLES ON THE CRUSADE AGAINST THE HOUSE-FLY

To the Editor:—Please give a list of articles and pamphlets on the crusade against the house-fly, particularly the efficient means of abating the fly menace.

G. H. Hansel, M.D., Rising Sun, Ind.

Answer.—Following is a list of articles dealing with this subject:

Howard, L. O.: The House-Fly: Disease Carrier, F. A. Stokes Company, New York, 1911 (excellent bibliography).
Doane, R. W.: Insects and Disease, Henry Holt & Co., New York, 1910.
Mitchell, E. G.: Mosquito Life, G. P. Putnam's Sons, New York, 1907.
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Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

A REFERENDUM VOTE ON ESSENTIAL LAWS

The Council on Health and Public Instruction has inaugurated a medicolegal bureau for the study of public health legislation and the preparation of standard laws on the most important subjects. The need of carefully prepared model laws on health topics has long been recognized. The value of such standards in securing uniform laws in the different states is well illustrated by the model law on vital statistics drafted eight years ago by the Committee on Uniform Vital Statistics Legislation appointed by the Committee on Legislation of the American Medical Association. This model bill has been revised a number of times. It has been endorsed by all of the leading public health organizations in the country, as well as by such bodies as the American Bar Association, the commissioners on uniform laws, the American Federation of Labor, and the General Federation of Women's Clubs. The same plan which was followed in drafting this law can be carried out to advantage in regard to any of the other important subjects of public health legislation.

When this work is taken up as a practical measure, however, a number of problems arise. One of the first and most important is, What are the essential subjects on which a state should legislate in order to protect its citizens against disease? When the laws of the different states are collected, systematically arranged and examined, it is found that legislation has been enacted on a large number of topics. Many of these laws were passed without careful consideration of their relation to the general subject. Many special laws have been enacted which might better have been included under general legislation. Even when allowance is made for the variation in title and subject in the different states, there are still forty-seven specific subjects relating to public health on which laws have been enacted. Obviously, out of this large number a few are essential and the majority are incidental and secondary.

The first question to be determined, therefore, is, What are the essential subjects for legislation? If a state were to be organized *de novo*, and if all of our present-day knowledge of disease prevention were utilized, what laws should the new state pass in order to take advantage of all the existing knowledge for the protection of the public health? Obviously, the reply to such a question depends largely on the knowledge, the experience and the point of view of the individual. Obviously, too, no one person is wise enough and broad enough in his point of view to answer such a question authoritatively.

A reply to this question may be found in the average of a large number of opinions representing all possible interests and classes.

In order to secure such a composite opinion a list was recently prepared containing approximately one thousand names, as follows:

Governors of states	52
Chief justices of supreme courts	49
Officers of the American Bar and State Bar associations	53
Commissioners on uniform laws	164
Officers and members of standing committees of the American Medical Association	50
Presidents of state medical societies	51
Secretaries of state medical societies	51
Members of the National Legislative Committee	51
Secretaries of state boards of health	49
Secretaries of state licensing boards	40
Officers of the General Federation of Women's Clubs and of state federations	127
State superintendents of education	48
Officers of national organizations interested in public health	30
Presidents of colleges and universities	124
Deans and secretaries of medical colleges	132
	1,071

This list comprises 1,071 names; 424 are names of physicians and 647 of non-medical men and women. A circular letter was sent to each person on the list. With the letter was enclosed a return postal card on which was printed the list of subjects of public health laws on which the various states had adopted legislation. These subjects were arranged alphabetically. Each person to whom the card was sent was asked to indicate thereon the ten subjects which he considered the most important subjects for legislation. The return card was to be mailed to the Secretary of the Council on Health and Public Instruction of the American Medical Association.

Out of 1,071 persons to whom this letter and card was sent, 600, or 56 per cent., replied. Three hundred and thirteen, or 48 per cent., of the non-medical correspondents, and 287, or 67 per cent., of the medical correspondents, replied. The largest percentage of replies (86 per cent.) came from secretaries of state medical societies, the smallest (40 per cent.) from judges of state supreme courts. Sixty-eight per cent. of state superintendents of education and 70 per cent. of officers of national organizations replied.

When the cards were tabulated the following results were secured:

Antispitting	141
Barber-shop inspection	44
Board of health	204
Cancer-research hospital	116
Contagious diseases	313
Regulation of dentistry	23
Common drinking-cup	121
Embalmers	15
State care of epileptics	82
Expert witnesses	103
Factory inspection	144
Care of feeble-minded	148
First aid in factories	34
Food and drugs	304
Garbage disposal	146
Habit-forming drugs	216
Hotel inspection	46
Care of insane	133
Leprosy	9
Live-stock sanitary laws	38
Health inspection of schools	389
Medical practice act	180
Midwifery	81
Milk and dairy laws	366
Mosquitoes	152
Nurses and nursing	27
Occupational diseases	98
Ophthalmia neonatorum	103
Optometry	21
Osteopathy	19
Pharmacy	17
Poliomyelitis	29
Public health	233
Quarantine	63
Rabies	18
Reporting venereal diseases	272
Railroad sanitation	67
Sterilization of criminals	184
Tenement-house inspection	121
Common towels	36
Tuberculosis	407
Tuberculosis in cattle	73
Vaccination	134
Vital statistics	226
Water and sewerage	373
Workmen's compensation act	104
Regulation of marriage	2
Infant mortality reduction	2
Antidust	1

Arranging the ten subjects which received the largest number of votes in order, the following result is secured:

Tuberculosis	407
Health inspection of schools	389
Water and sewerage	373
Milk and dairy	366
Contagious diseases	313
Food and drugs	304
Reporting venereal diseases	272
Public health	233
Vital statistics	226
Habit-forming drugs	216
Board of health	204

Besides offering an opportunity for an expression of opinion on the part of a large number of persons in positions of influence and experience, a number of interesting facts become apparent on general study of the tabulation. The high standing of tuberculosis is unquestionably due to the enormous amount of public education on this subject which has been carried on for years past. The expression regarding the importance of medical school inspection is gratifying. If 389, or nearly 40 per cent., of those on the list feel that this is the second most important subject for legislation, it ought not to be difficult to convince the rest of the public of the importance of such laws. Legislation on water and sewerage, milk- and dairy-supplies, food and drugs, naturally appeal to the majority of people. The fact that legislation requiring the reporting of venereal diseases was given seventh place is probably due to the increased discussion on this subject which has appeared in the last few years.

Many other interesting facts appear. For instance, twenty-four out of sixty-one officers of the General Federation of Women's Clubs consider antispitting laws of importance, while only three governors, two chief justices and three officers of the American Medical Association consider this subject worthy of legislation. On the other hand, twenty-one presidents of colleges out of the fifty-six who replied consider it of importance. The expression of opinion regarding a board of health act is interesting. Twelve governors out of twenty-four, six chief justices out of twenty, twenty-three commissioners of uniform laws out of seventy-eight, twenty secretaries of state societies, twenty members of the National Legislative Committee and twenty-four deans and secretaries of medical colleges regard this subject of the first importance. The vote on medical inspection of schools was as follows:

Governors	13
Chief justices	11
Officers of the American Bar Association and State Bar associations	11
Commissioners of uniform laws	43
Officers of the American Medical Association	18
Presidents of state societies	23
Secretaries of state societies	33
Members of the National Legislative Committee	32
Secretaries of state boards of health	23
Secretaries of state licensing boards	12
Officers of General Federation of Women's Clubs	35
State superintendents of education	27
Officers of national organizations	15
Presidents of colleges and universities	40
Deans and secretaries of medical colleges	53

As thirty-two superintendents of education voted, and twenty-seven of them voted for health inspection of schools, this indicates that 87 per cent. of the state superintendents of education are in favor of such a measure.

The opinion held regarding sectarian practice acts is evidently not very favorable, as only twenty-one persons regarded optometry laws as important, and only nineteen regarded osteopathy laws as necessary. A peculiar fact is that practically all of these votes were cast by the medical part of the list, the non-medical voters not regarding these subjects as of sufficient importance to include them in their vote. The expression of opinion regarding medical practice acts shows a wide divergence of opinion. This subject is included on their list of the ten most important matters for state legislation by 5 governors, no chief justices, 9 officers of the American Bar Association, 17 commissioners on uniform laws, 17 officers of the American Medical Association, 17 presidents of state medical societies, 22 secretaries of state societies, 14 members of the National Legislative Committee, 9 secretaries of state boards of health, 16 secretaries of state licensing boards, 5 officers of the General Federation of Women's Clubs, 2 state superintendents of education, 3 officers of national organizations, 15 presidents of colleges, and 29 deans and secretaries of medical colleges. The large number of medical college officers who held this opinion would indicate that the regulation of the practice of medicine is and should be regarded as an educational and not as a sectarian problem.

When the subject is considered analytically rather than from the point of view of the opinions expressed by the six hundred who voted, it will probably be agreed by most of those interested that many of the subjects of special legislation could well be included under broad general laws. Specific legislation on each special health topic is unnecessary. If a law creating a state board of health is properly drafted, provision can be made for including under the general powers of the board many of the subjects now regulated by special legislation. For instance, antispitting, barber-shop inspection, contagious diseases, suppression of the common drinking-cup, factory inspection, garbage disposal, hotel inspection, suppression of mosquitoes, prevention of occupational diseases, ophthalmia *neonatorum*, poliomyelitis, regulation of quarantine, prevention of rabies, reporting of venereal diseases, railway sanitation, control of tenements and lodging-houses, suppression of tuberculosis, regulation of vaccination, and regulation and compilation of vital statistics can all be brought under the scope of a general state board of health act. The logical order for the consideration of public health legislation would be something like the following:

1. Board of health acts.
2. Vital statistics law, if not included in 1.
3. Law authorizing sanitary survey of the state and making appropriation for it.
4. Practice act, including the regulation of midwives and of all sects treating the sick for compensation.
5. Law establishing county and city health organizations with definite relation to each other and to the state board.
6. Food and drugs act.
7. Act regulating water, sewerage and waste disposal.
8. Milk and dairy laws.
9. Sanitary and health inspection of schools.
10. Housing law, or law for the control of industrial diseases.

The exact order of these topics would naturally be subject to modification according to the views of the individual. Probably the relative importance of the last three or four topics would also be open to discussion. As for the first six, however, their importance seems apparent. A board of health must be created or a responsible health officer of the state appointed before anything else can be done. After the health machinery of the state is completed, the first and most important thing to find out is what diseases are killing the people in the state and how many births, deaths and marriages are occurring. This law should also provide for the reporting of such diseases as may seem advisable. The next most important work is the sanitary survey of the state, with a view to determining the causes of sickness and how they can be removed. Definite laws creating, or at least authorizing, city and county health organizations are of the first importance after the state health machinery has been established. It is also desirable that such local organizations should have a definite relation to each other and to the state board.

The opinions expressed by those who responded indicate a growing opinion on the part of the non-medical public of the importance of proper laws and regulations for the protection of the public health. The fact that 50 per cent. of the non-medical persons on the list, all of them busy men and women, responded, indicates a marked degree of interest in the subject. So far as is known, this mode of securing public opinion has never before been tried. It is planned to retain this mailing-list of one thousand persons in official positions and to send to each person provisional drafts of model laws on the most important subjects with a view to obtaining their criticisms and suggestions, in order that the model laws when completed may represent as wide a point of view as possible.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7. Sec., Dr. John Wix Thomas, Phoenix.

COLORADO: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

IDAHO: Wallace, April 7. Sec., Dr. John F. Schmershall, Jerome.

MINNESOTA: Minneapolis, April 7-10. Sec., Dr. Thomas McDavitt, 814 Lowry Bldg., St. Paul.

MONTANA: Helena, April 7. Sec., Dr. Wm. C. Riddell, Helena.

NEW MEXICO: Santa Fe, April 13. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, April 14. Sec., Dr. John W. Duke, Guthrie.

RHODE ISLAND: Providence, April 2. Sec., Dr. Gardner T. Swarts, Room 315, State House, Providence.

UTAH: Salt Lake City, April 6-7. Sec., Dr. G. F. Harding, 403 Templeton Bldg., Salt Lake City.

WEST VIRGINIA: Charleston, April 21. Sec., Dr. S. L. Jepson, 81-12th St., Wheeling.

Massachusetts July Report

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, July 8-10, 1913. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 137, including non-graduates, of whom 94 passed, including 6 non-graduates, 2 osteopaths, and 43 failed, including 11 non-graduates and 7 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1911)	75
Georgetown University	(1913)	80.3
Medical School of Maine	(1913)	77.9
College of Physicians and Surgeons, Baltimore	(1913)	80
Johns Hopkins University	(1913)	83
University of Maryland	(1907)	77
Boston University	(1913)	75.4, 77, 80, 82.2, 83.2, 87.2.
Harvard Medical School	(1884) 80; (1911) 77.9, 80.4; (1912) 75, 75, 76.5, 77.2; (1913)	75, 75, 75.7, 76.4, 76.5, 76.9, 77.5, 77.8, 78.3, 79.7, 80, 80.5, 80.6, 80.8, 81.5.
Tufts College Medical School	(1912) 75, 76.2; (1913)	75, 75, 75, 75, 75, 75, 75, 75.3, 75.8, 73.2, 77.4, 77.5, 77.6, 77.6, 77.7, 77.8, 78.2, 78.4, 78.5, 78.6, 78.7, 79.1, 79.2, 79.2, 79.4, 79.5, 79.9, 80, 80.1, 80.4, 80.4, 80.8, 81.5, 81.7, 81.8, 82.5, 82.5, 83.2.
Dartmouth Medical School	(1912) 78.5; (1913)	75
Cornell University	(1909)	83
New York Homeopathic Med. College and Hosp.	(1913)	81.2
New York Medical Coll. and Hosp. for Women	(1913)	79.5
University of Buffalo	(1912)	79.7
Women's Medical College of Pennsylvania	(1913)	78.3
University of Vermont	(1909) 77.1; (1912) 75.2; (1913)	75.2
Queen's University, Ontario	(1912)	75
Royal College of Palermo, Italy	(1908)	76.1
Non-graduates		75, 75, 75, 76.5, 79.4, 79.7.

FAILED

College	Year Grad.	Per Cent.
Atlanta School of Medicine	(1912)	68
University of Georgia	(1913)	71.5
Chicago College of Medicine and Surgery	(1913)	71.9
Medical School of Maine	(1913)	71.7
Baltimore Medical College	(1912)	71.2
Eastern University School of Medicine, Baltimore	(1913)	53*
Maryland Medical College	(1912) 65.8; (1913)	54.4
Boston University	(1913)	69.7
College of Physicians and Surgeons, Boston	(1912) 72.6; (1913)	63.4, 66.
Tufts College Medical School	(1911) 63.2; (1913)	69.1, 70.5, 71.9, 72.
Dartmouth Medical School	(1909)	69.9
Columbia Univ. Coll. of Phys. and Surgs., N. Y.	(1912)	72.2
Woman's Medical College of Pennsylvania	(1913)	71
University of Vermont	(1908) 69.5; (1912)	57.1
University of Naples, Italy	(1907)	65.7
University of Helsingfors, Russia	(1911)	54.4
University of St. Joseph, Beyrouth, Syria	(1912)	58.8
Non-graduates		49.9, 51.5, 53.2, 55.6, 60.5, 65.2, 70.2, 70.7, 71.7, 72.4†.

* A new Eclectic medical college reported not recognized by the Maryland Board of Medical Examiners.

† No grade given.

Massachusetts September Report

Dr. W. P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the written and practical examination held at Boston, Sept. 9-11, 1913. The number of subjects examined in was 11; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 67, including 7 osteopaths and 13 non-graduates, of whom 42 passed, including 5 osteopaths and 2 non-graduates, and 25 failed, including 2 osteopaths and 10 non-graduates. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Yale Medical School	(1911)	77.2
George Washington University	(1905)	75
Atlanta School of Medicine	(1912)	75
University of Georgia	(1913)	75.2
College of Physicians and Surgeons, Baltimore	(1913)	78.1
Boston University	(1913)	75
Harvard Medical School (1912) 81; (1913) 80.4, 81.5, 82.		
Tufts College Medical School (1911) 79.2, 82; (1912) 75.8, 76.8, 79.5; (1913) 75, 75.4, 75.6, 76.1, 77.2, 77.3, 78.5, 78.6, 78.7, 80.1, 80.9.		
Dartmouth Medical School	(1912)	75
Columbia Univ., Coll. of Phys. and Surgs., N. Y.	(1912)	76.7
University of Pennsylvania	(1906)	80
Woman's Medical College of Pennsylvania	(1913)	78.7
University of Vermont (1908) 75.7;	(1913)	76.8
Medical College of Virginia	(1912)	75
Royal University of Naples	(1908)	79.1
University of Helsingfors, Finland	(1911)	75
Non-graduates	75,	75.7

FAILED

College	Year Grad.	Per Cent.
Coll. of Physicians and Surgeons, San Francisco	(1903)	67.2*
Eastern University, School of Medicine	(1913)	62.8
National Medical University, Chicago	(1909)	52.7
Maryland Medical College	(1913)	69.5
College of Physicians and Surgeons, Boston (1913) 61.7, 62.6, 65.5, 72.2.		
Tufts College Medical School (1913) 69.8, 69.9, 70.9.		
University of Vermont	(1912)	67.5
Royal University of Naples	(1907)	70
Non-graduates, 46.4, 57, 58.8, 62.2, 62.5, 70.2, 70.7, 71.2, 72.4, 72.6.		

* Name does not appear on published list of graduates of said college.

Massachusetts November Report

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, Nov. 11-13, 1913. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 70, including 20 non-graduates and 2 osteopaths, of whom 36 passed, including 2 non-graduates, and 34 failed, including 18 non-graduates and 2 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1912)	75
Medical School of Maine (1903) 75;	(1908)	81
Baltimore Medical College	(1912)	75
College of P. and S., Baltimore (1901) 75;	(1913)	78.1
Johns Hopkins University	(1910)	82.9
Harvard Medical School (1912) 76; (1913) 79.2, 80, 82.7		
Tufts College Medical School (1912) 75.8, 78, 80.8; (1913) 79.1, 79.2		
Dartmouth Med. School (1906) 75; (1912) 78.7; (1913) 77, 81.4		
Univ. and Bellevue Hosp. Med. Coll. (1912) 79;	(1913)	79.8
Jefferson Medical College	(1911)	78.6
Woman's Med. College of Pennsylvania (1911) 75;	(1913)	77
Univ. of Vermont (1912) 75, 76.4, 80.4, 82.2;	(1913)	78.9
Marquette University	(1913)	76.9
McGill University, Quebec	(1913)	77.6
Royal University of Parma, Italy	(1904)	78.7
University of Valladolid, Spain	(1903)	76.5
Non-graduates		76.4, 77.2

FAILED

College	Year Grad.	Per Cent.
College of P. and S., San Francisco	(1903)	71.2*
Chicago College of Med. and Surgery	(1913)	68.3
Medical School of Maine	(1913)	71.8
Eastern University School of Medicine	(1913)	67
Maryland Medical College (1912) 55.8, 69.7;	(1913)	67.7
College of P. and S., Boston (1913) 67.6, 68.9, 70.3		
Tufts College Med. School (1911) 69.3; (1913) 72, 72.3, 72.8		
Non-graduates. 45.1, 46.9, 53, 55, 59.7, 61.6, 63.7, 65.4, 65.9, 69, 69.4, 70.7, 71, 71.5, 72.1, 72.2, 72.7, 73.		

* Name does not appear on published list of graduates of said college.

Kansas October Report

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Oct. 14-16, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 12, of whom 9 passed and 3 failed. Eight candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University (1912) 75,7;	(1913)	77
Rush Medical College	(1913)	79, 80
University of Illinois	(1912)	81
St. Louis University	(1913)	84
University Medical College, Kansas City	(1913)	75.8
John A. Creighton Medical College	(1913)	91.5
Syracuse University	(1875)	78

FAILED

College	Year Grad.	Per Cent.
Hering Medical College	(1912)	74
University Medical College, Kansas City	(1913)	63
Meharry Medical College	(1913)	70

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1912)	Illinois
University of Illinois	(1912)	Illinois
College of Phys. and Surgs., Kansas City, Kan.	(1898)	Missouri
American Medical College	(1883)	Missouri
Barnes Medical College	(1903)	Missouri
Ensworth Medical College	(1909)	Missouri
Washington University	(1907)	Missouri
University of Pennsylvania	(1907)	Penna.

Kentucky December Report

Dr. A. T. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, Dec. 11-13, 1913. The number of subjects examined in was 15; percentage required to pass, 70, and not less than 60 in any one branch. The total number of candidates examined was 28, including 1 osteopath, of whom 21 passed, including 1 osteopath, and 7 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University	(1913)	78, 85
Hahnemann Medical Coll. and Hospital, Chicago	(1911)	86
University of Louisville (1911) 74, 80; (1912) 79; (1913) 71, 83 84, 85, 86, 88.		
Tulane University	(1913)	88
St. Louis College of Physicians and Surgs.	(1913)	80
University and Bellevue Hosp. Medical College	(1911)	93
Jefferson Medical College (1912) 90;	(1913)	89
Lincoln Memorial University	(1913)	74
Meharry Medical College	(1913)	76
Vanderbilt University	(1910)	88

FAILED

College	Year Grad.	Per Cent.
Louisville National Medical College (1912) 55, 60, 65, 65.		
University of Louisville	(1911)	69
Lincoln Memorial University	(1911)	57
Meharry Medical College	(1911)	66

Ohio December Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports the oral, written and practical examination held at Columbus, Dec. 9-11, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 21, of whom 20 passed and 1 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University (1912) 79.5, 88.1;	(1913)	75.3
University of Louisville	(1912)	86
University of Michigan, Dept. of M. and S.	(1898)	83.1
New York Medical College and Hosp. for Women	(1895)	75
Cleveland College of Physicians and Surgeons	(1913)	81.4
Cleveland-Pulte Medical College	(1913)	77.1
Eclectic Medical College, Cincinnati	(1911)	77.5
Ohio-Miami Medical College	(1913)	79.9
Western Reserve University (1909) 83.9; (1913) 82.7, 82.9, 83.8, 84.4, 92.7.		
University of Pennsylvania (1887) 75;	(1912)	85.5, 87.9
National University, Athens, Greece	(1911)	78.4

FAILED

College	Year Grad.	Per Cent.
Starling-Ohio Medical College	(1913)	72.3

Pennsylvania December Report

Dr. N. C. Schaeffer, secretary of the Bureau of Medical Education and Licensure of Pennsylvania, reports the written examination held at Philadelphia, Dec. 2-4, 1913. The number of subjects examined in was 5; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 120, of whom 108 passed and 12 failed. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined
Georgetown University (1911)	(1913)	2
Howard University	(1913)	1
Chicago College of Med. and Surg.	(1913)	1

Rush Medical College	(1913)	1
University of Louisville	(1911)	1
Baltimore Medical College	(1911) (1913, 2)	3
College of Phys. and Surgs., Baltimore	(1912, 2) (1913)	3
Johns Hopkins Medical School	(1910)	1
Maryland Medical College	(1912, 6)	6
University of Maryland	(1912) (1913)	2
Columbia University, Coll. of P. & S., N.Y.	(1903) (1911)	2
New York Homeo. Med. Coll. and Hosp	(1913)	1
Cleveland-Pulte Medical College	(1913)	1
Hahnemann Med. Coll. and Hosp., Phila.	(1912) (1913, 8)	9
Jefferson Med. Coll.	(1910) (1911) (1912, 3) (1913, 12)	17
Medico-Chir. Coll. of Phila.	(1909) (1912, 4) (1913, 20)	25
Temple University	(1912, 2)	2
University of Penn.	(1903) (1911,3) (1912,6) (1913,7)	17
University of Pittsburgh	(1912) (1913, 5)	6
Woman's Med. Coll. of Pennsylvania	(1912) (1913, 2)	3
Medical College of Virginia	(1913, 2)	2
Queen's University, Kingston Ontario	(1909)	1
University of Toronto	(1908)	1

FAILED

University of Southern Calif., Coll. of P. and S.	(1912)	68.8
Georgetown University	(1913)	72.6
University of Louisville	(1911) 70.4; (1912)	52.6
Maryland Medical College	(1912) 65.6; 70.4; (1913)	70.
Leonard Medical School	(1913)	68.
Hahnemann Medical College and Hosp., Phila.	(1913)	67.8
University of Naples	(1895) 69.2; (1903) 71.6; (1913)	64.

The following questions were asked:

PHYSIOLOGY, PATHOLOGY AND BACTERIOLOGY

1. In acute lobar pneumonia, describe the local lesion and the disturbed functions. 2. Name two heart lesions that might result in broken compensation, and show how the normal functions of the heart would be disturbed. 3. Describe two lesions—one of the gall-bladder and one of the liver—that will cause lessening of the supply of bile to the duodenum. Describe the effect of this loss on digestion assimilation. 4. Describe the lesions, name the usual causes and give the laboratory technic for demonstrating the varieties of urethritis. 5. In carcinoma of the female breast, describe the gross and the microscopic appearance of a common variety and give the usual points of metastasis. 6. In examining a specimen of urine from a pregnant woman, state the findings that would suggest oncoming uremic convulsions. 7. Given a case of malaria, describe the lesions and detail the laboratory tests for making the diagnosis positive. 8. Describe the lesions in tabes dorsalis (locomotor ataxia), and show how the functions of the cord are disturbed. 9. Given a case of meningitis, give your technic for demonstrating the determining cause by means of lumbar puncture. Discuss the disturbance of function that would result from such a case. 10. Given a suspected case of typhoid fever, by laboratory *tests differentiate the case from septic infection.*

DIAGNOSIS, SYMPTOMATOLOGY, MEDICAL JURISPRUDENCE AND TOXICOLOGY

1. Describe the *symptoms and course of chorea.* 2. Enumerate the symptoms of varicella. Name a disease with which it may be confused and differentiate them. 3. Enumerate the symptoms and physical signs diagnostic of pleurisy with effusion. 4. Enumerate the diagnostic symptoms of chronic eczema, and differentiate it from scabies. 5. What is pyemia? How is it characterized clinically, enumerating tl [illegible] numerate the symptoms of tuberculous [illegible] it from acute articular rheumatism. 7 [illegible] numerate the symptoms *of acute nephritis. Name four toxic drugs that may produce it.* 8. Describe in detail the symptoms of strychnin poison, and differentiate it from uremic convulsions. 9. How would you differentiate a case of severe ptomain poisoning from the conditions produced by arsenical poisoning? 10. As a witness in court, what would be your evidence in substantiating the fact of death by drowning?

GYNECOLOGY AND OBSTETRICS; PHYSIOLOGIC CHEMISTRY

1. Given a pregnant woman, of seven months or more, stricken suddenly with severe hemorrhage, what would be your deductions? Outline the management of the case. 2. State pelvic measurements or other conditions that would warrant an interference with the natural progress of gestation or of labor; what procedure would you recommend in each *condition noted.* 3. *Enumerate the conditions* that must be considered in excessive or protracted bleeding in a non-pregnant woman: outline surgical operations or methods that may be required, with the reason for selecting each. (Omit details of operation.) 4. If at the third month, a primipara should engage you to care for her through the period of gestation and labor, give in detail your care of the case, including measurements and tests. 5. What injuries may result to the birth-canal from labor? Give in detail the management of a case of normal labor, with a view of preventing such injuries. 6. What is the *significance of sudden* collapse and shock that might develop during labor? Outline your treatment for such a case. (Omit description of operation.) 7. What breast complications *may follow confinement? Outline the* care of the breast that would probably prevent such complications. If they should occur, how would you treat them? 8. Indicate the steps in the digestion and absorption of the food substances present in a ham sandwich. 9. Discuss the chemistry of intestinal fermentation and putrefaction. 10. How may blood be detected in the feces, and what is the *significance of this finding?*

SURGERY AND ANATOMY

1. Enumerate the constitutional and local conditions that may cause delayed or non-union *of bone after a fracture.* State two surgical procedures for its correction. 2. Outline the methods of examination by which you would determine the existence of a fracture at the surgical neck of the humerus: what is the usual deformity in this fracture? What is the anatomic explanation? 3. Enumerate the *early* symptoms that are caused by a typhoid perforation. Outline a surgical operation for the same. 4. State the usual anatomic avenues by which infection reaches the mastoid process. Outline a surgical operation for mastoid abscess. 5. What anatomic structures *may* be involved in the extension of a bunion? Describe its surgical treatment. 6. Name the varieties of club-foot: outline a surgical operation for the correction *of any one form,* with the *anatomic and mechanical reasons* for employment of same. 7. In fractures of both bones at the forearm, the actions of what muscles should be specially considered? What character of splints should be applied? 8. Enumerate symptoms and conditions on which might be based the diagnosis of a malignant growth of the breast: outline a suitable surgical operation, giving the surgical anatomy of parts. 9. What is the usual position of the fragments in fracture of the patella? What is the anatomic explanation? State, without details of technic, two methods *of treatment. 10. Outline two methods of treating* carbuncle—give reasons for employment of each.

PRACTICE AND MATERIA MEDICA AND THERAPEUTICS; HYGIENE AND *PREVENTIVE MEDICINE*

1. State the sanitary precautions to be observed in the treatment of scarlatina. What are its possible dangers? Give indications of three remedies that might be used in its treatment. 2. (*a*) *Describe the technic of general anesthesia* (*b*) Give reasons for the choice of each one of three agents used for this purpose. 3. Give the management and treatment of a well-developed case of follicular tonsillitis. 4. Outline the most important factors in the *treatment of a case of incipient tuberculosis.* 5. *Outline the* therapeutic action of (*a*) santonin (cina homeopathic), (*b*) camphor, (*c*) cimicifuga, (*d*) aconite, (*e*) ergot. 6. Outline the general medical treatment in exophthalmic goiter. What symptoms, in your opinion, would indicate the need of surgical intervention? 7. Given a case of typhoid fever with hemorrhage, outline the management during the first period of the hemorrhage and post-hemorrhagic stage and state the therapeutic action of each drug used. 8. In the treatment of chronic interstitial nephritis, what dietetic and hygienic suggestions would you make? Name three drugs that might be employed in the treatment of this condition, with the precise reason for the employment of each. 9. What are the main objects accomplished by the scientific ventilation of a school building? What degree of temperature is most conducive to health and mental activity in such buildings? 10. What are the main dangers to be apprehended in raw milk as ordinarily found in the market? What measures should be adopted in minimizing such dangers?

Book Notices

THE HEALTH MASTER. By Samuel Hopkins Adams. Cloth. Price, $1.35 net. Pp. 338. Boston: Houghton, Mifflin Company, 1913.

Recently we have become familiar with the theater, including the "movies," as a means of public education on health topics. Whether or not this method of presenting matters of public hygiene will be permanent remains to be seen. However effective the theater may be, its influence is necessarily limited to the comparatively small number who can witness the performances. The popular book, however, can be reproduced without limit, and thousands can read it where one would witness a theatrical performance; while a single copy, selling at the price of one theater-ticket, can be passed from hand to hand until it is worn out.

The appearance of a story presenting the latest scientific knowledge on health matters is encouraging. When the writer is not a physician, but one who is widely and favorably known as a novelist, as is Samuel Hopkins Adams, his book becomes all the more significant. Known to many thousands of readers for his articles in *Collier's Weekly* on the "Great American Fraud," Mr. Adams' story of a family which, through the wisdom of the father, is given the advantage of the latest scientific knowledge, will come as a striking demonstration of the value of modern preventive medicine in the household. A well-to-do business man decides to adopt the so-called Chinese plan of employing a physician; that is, to engage a competent man, at an annual salary, to guard the family from disease, instead of making them well after they become ill. Through good fortune, he secures the right man for the position. Dr. Strong may be a trifle abrupt in some of his methods; in fact, the professional reader can readily understand why he was not a conspicuous success in general practice under conventional conditions. But he knows his business, and with entire charge of the household (as soon as he has converted Grandma Sharpless) he is able to show results that amply justify the expense and trouble required.

Following his employment as family health guardian, he inquires into the milk- and water-supply of the household; investigates the school which the children attend; finds out where flies in the kitchen are coming from, and looks over each member of the family. The first occasion for interference arises when he finds the baby of the household suffering from adenoids. Father, mother and grandmother make the usual objection to prophylactic interference, and are answered by the health master, with the result that three days later Betty, the baby, tells her little next-door neighbor, "You ought to get a new nothe, Thally. It don't hurt much and breathin' ith a lot more fun." The corner drug-store, with its habit-forming mixtures, heart-depressant headache tablets and cheap whisky disguised as patent medicines, comes in for a discussion in which Mr. Adams is clearly at home. The avoidance of eye-strain and the best method of illumination are discussed under the title "The Magic Lens." Incidentally, the health master makes over a neurotic girl into a strong and beautiful woman, by the exercise of common sense and scientific knowledge. Scarlet fever in the household serves as an object-lesson on infectious diseases. A hopeless case of cancer in another family furnishes a text for a discussion of this dread disease. A visit to the town of a faker who combines quackery with religion gives an opportunity to discuss this form of fraud. A chapter on colds, one on infectious diseases of childhood, and a final chapter on sex hygiene seem to the interested reader to be more the natural development of the story and of the experiences of the family than any effort to bring public health into the book for discussion.

Mr. Adams has done a marked service to the public, and has opened up a new field for literary effort. He shows a knowledge of scientific medicine remarkable in a layman, and this makes what he says of most importance. It is to be hoped that his book is but the forerunner of others. A cheap edition in paper covers, purchasable in quantities at a nominal figure, should be available. State and municipal departments of health could not secure any better literature for public education. Copies should go into all public libraries and reading-rooms. In fact, some of our philanthropic organizations who wish to devote their surplus funds to a proposition sure to bring results could not do better than to purchase and distribute as many copies of Mr. Adams' book as possible. Like his earlier articles on patent-medicine frauds, this book is so reasonable and sensible as to carry conviction, while the scientific truths will stick in the minds of the readers long after the details of the story are forgotten.

RADIUM AS EMPLOYED IN THE TREATMENT OF CANCER, ANGIOMATA, KELOIDS, LOCAL TUBERCULOSIS AND OTHER AFFECTIONS. By Louis Wickham, M.V.O., Médicin de St. Lazare, and Paul Degrais. Translated by A. and A. G. Bateman, M.B., C.M. Cloth. Price, $1.25 Pp. 111, with 53 illustrations. New York: Paul B. Hoeber, 1913.

This is an epitome of the larger work by the same authors which has been reviewed in these columns. It does not go into the details of methods and technic found in the larger work, but it gives a summary of the authors' clinical work. The reason for the publication of this work is not clear; it contains nothing not found in the other. The book is interesting as showing the clinical results of radium therapy in pioneer skilled hands. The results show, as Wickham demonstrated long since, that radium, like the Roentgen rays, can produce remarkable therapeutic results in various pathologic tissues, including cancer. It is interesting to note that the results here shown—many of them published several years ago—are of the same character as those which have recently been used, as though they were new, with such telling effect in exploiting radium in the treatment of cancer before the profession and the public.

EPIDEMIC INFANTILE PARALYSIS (Heine-Medin Disease). By Prof. Paul H. Römer, Principal of the Institute of Hygiene and Experimental Medicine of Marburg. Translated by H. Ridley Prentice, M.B., B.S., M.R.C.P. Cloth. Price, $2.75 net. Pp. 208, with 57 illustrations. New York: William Wood & Co., 1913.

This monograph gives an entertaining and clear account of what is known about the natural history of infantile paralysis up to the last year. The author gives generous credit to Wickman and agrees with him on most points on which there is a difference of opinion, having reached similar conclusions from his own extensive experiments and observations. The book contains six chapters: 1. The development of our knowledge of the nature of the disease of Heine and Medin. II. The symptomatology of the disease in man. III. Etiology of the disease. IV. Pathology and pathogenesis. V. Epidemiology VI. The fight against the disease.

Miscellany

Deaths Following Injection of Neosalvarsan in Los Angeles

Last week (THE JOURNAL, March 14, 1914, p. 861) we noted the deaths of seven patients in the Los Angeles County Hospital following intraspinal injection of neosalvarsan. At that time we stated that a fuller report would be published later. We have since received by wire from our special correspondent the following *statements from* Dr. C. H. Whitman, superintendent of the hospital, and Dr. A. T. Charlton, pathologist, which embody the substance of a report made by them to the Los Angeles County Board of Supervisors:

STATEMENT OF DR. WHITMAN

I herewith submit a report covering as nearly as is possible for me to do all of the circumstances and particulars appertaining to the fatalities which occurred at the County Hospital following the administration of salvarsanized serum to eight patients, all of whom were suffering from the effects of syphilis in advanced stages of the disease. In some there was disease of the bones. Others were at advanced stages of locomotor ataxia in which portions of the spinal cord were degenerated. The Wassermann test, which is considered reliable, was made in each and every case. In addition, cell-count of the cerebrospinal fluid and the butyric-acid test were made, each corroborating the clinical diagnosis of syphilis. Hence there can be no question as to the nature of the disease from which these patients suffered.

The diagnosis having been confirmed, the question of treatment was a matter of selection. In view of the facts that the older forms of treatment had proved ineffective in syphilitic cases in which the spinal cord was involved, and that neosalvarsan, which has been regarded as a specific in the earlier stages, had proved ineffective when administered by the blood or into muscular tissue, another recognized mode of procedure was adopted, namely, the intraspinal administration of salvarsanized serum. The technic of this method is somewhat complicated, but it is exact; that is, the quantity given to each person is definitely known, and according to reports from medical authorities this method is more effective than any other. In this connection, I desire to state that the Los Angeles County Hospital, instead of being an experimental station, as might be inferred from some published accounts concerning this unfortunate affair, is in fact, although progressive, one of the most conservative of its kind, which is evidenced by the fact that the intraspinal method of using salvarsanized serum had been in use for at least a year in many medical centers throughout the country before being used in this institution, and medical reports seem to indicate that this method is becoming the method of choice by many physicians in the treatment of spinal syphilis. It follows, therefore, that the treatment here used was no experiment, and I desire at this time to emphasize the fact that no experimental treatment on human beings has been conducted in this institution since my incumbency, nor will any be tolerated.

March 7, after consultation with several physicians, all members of the attending staff, Dr. A. T. Charlton directed the administration of salvarsanized serum to eight patients in the County Hospital. The serum was prepared by himself, according to authority. As all accounts so far published in the local press concerning the preparation and administration of this remedy to these patients are more or less inaccurate, I submit herewith attached, in detail, Dr. Charlton's statement concerning the technic followed by him throughout the whole procedure. I desire to state further that from the time my attention was called to these cases until the present, I have left nothing undone that would shed light on the cause of this tragedy. I personally drove to Pasadena and got the coroner and, at his request, went for the county necropsy surgeon. I also called in consultation half a dozen or more prominent members of the profession, whose knowledge and advice I thought might be of service to us in this emergency. I personally telephoned to all of the morning newspapers, giving them the first information they had of the affair, and I have practically placed myself and the records of the hospital at the disposal of the public through the press and county officials ever since. I will state that the embalming of these bodies prior to necropsy was not done at the County Hospital, or by any one connected with the hospital, but was done without our knowledge after the coroner had removed the bodies from the hospital. It is only fair to the coroner to state that to my personal knowledge he was advised by six or more physicians that a necropsy would not reveal any characteristic lesions that would account for the deaths, and this opinion was substantiated by the necropsy. The necropsy, however, was justified since it revealed syphilitic lesions in the lung, liver and spinal cord in a patient who had denied having syphilis, thus corroborating the clinical and laboratory diagnosis and justifying the antisyphilitic treatment.

The most plausible explanation of the cause of death in these cases is that oxidation had taken place in the neosalvarsan. This could have occurred through some defect in the glass container that was not apparent at the time the preparation was used.

In conclusion I desire to express our appreciation of the treatment accorded our County Hospital by the great mass of the public and the press in this unfortunate affair, and I can only repeat that there is nowhere more sorrow concerning this unfortunate outcome of what was intended to be for the best health interests of the deceased patients than there is among the house and attending staffs of the Los Angeles County Hospital.

STATEMENT OF DR. CHARLTON

Friday, March 6, between 9 and 11 a. m., I withdrew about 15 c.c. of blood from the veins of the arms of eight patients. From two others only about 6 c.c. of blood were obtained. As the amount of blood received from the latter two patients furnished an insufficient quantity of serum for the spinal treatment, I decided to make a dilution which would include eight spinal and two intravenous treatments, and this was done. Two ampules were used for this dilution. On account of the lapse of time, the intravenous treatment was not used. The blood was taken through sterile pipets and placed in sterile centrifuge tubes, and the serum separated from the fibrin and red cells. The serum, which was perfectly clear, was pipetted off to the amount of 5 c.c., and this was placed in a sterile glass-stoppered bottle. To this was added 1, 2 or 3 mg. of freshly dissolved neosalvarsan in sterile normal salt solution. Following this there were added to the preparation 8 c.c. of sterile normal salt solution, a sterile graduated all-glass syringe being used. This procedure was carried out absolutely with the serums from each of the eight patients separately. The preparations were then all placed in a water-bath at a temperature of 54 C. for half an hour. They were then placed in a refrigerator for twenty hours, each bottle labeled with the patient's name and the dosage for each.

Under the usual aseptic conditions from 3 to 7 c.c. of spinal fluid were drawn from each patient. Then from each individual bottle there was taken the diluted salvarsanized serum, a sterile graduated glass syringe being used, and with this syringe the contents were introduced through the same needle by which the spinal fluid was withdrawn.

Protests Against the Exploitation of the Tuberculous

The following quotation is from a paper by Dr. L. Rabinowitsch-Kemper of the University of Berlin, read before the last meeting of the National (British) Association for the Prevention of Consumption and Other Forms of Tuberculosis:

> "As the result of various observations I suspect further that tubercle bacilli may be caused to enter the blood-stream not only by the injection of tuberculin, but also by the use of chemicotherapeutic preparations; it appears that the most diverse irritants acting on the tuberculous organism favor the entrance of bacilli into the circulation.
>
> "In this direction an extensive field for research is presented for scientific activity. Still more, as has recently become usual, experimental researches in laboratories are necessary rather than that the tuberculous patient should be required to play to some extent the part of the experimental animal. In precisely the last two years a regular succession of means for the treatment of tuberculosis have been put on the market, without previously having been sufficiently investigated. Some of these have only enjoyed an evanescent existence.
>
> "Brilliant cures under the mask of science are announced to the public in the fashion of the advertiser. The new method is always infinitely superior to all the other methods of tuberculosis treatment. The evil results are charitably veiled. The dead can no longer speak—those who have to thank such 'cures' for premature delivery from their tuberculous infection. May the recently uttered words of Theobald Smith, the great American tuberculosis investigator, receive full consideration: 'The medical profession should see to it that vaccine therapy does not degenerate into inconsiderate and reckless experiments on human beings, that it does not create false hopes in hosts of patients, and that it does not originate and end in commercialism and the desire to exploit the weak and unfortunate.' These sentiments, I am sure, will call forth a ready assent in your minds."

Reading Courses and Scientific Home-Making.—The state of New York has begun an important scheme toward making better citizens through a series of reading courses conducted from Cornell University under the directorship of L. H. Bailey. These courses are to cover a variety of subjects and are adapted and intended especially to reach the small town and farming population. The course of lessons for the farm home consists of carefully prepared pamphlets on a multitude of subjects connected with the house, the garden, the preparation of foods, the value of the various foods in the dietary, the matter of proper clothing and how to select and judge textiles, the preservation of fruits and other foods, the work of the dairy, physical welfare study and entertainment, social and sociologic aspects of country life, etc. These lessons are sent out monthly to those who express a desire for them, and each is accompanied by a sheet on which is propounded a question to be answered on some subject selected for the course. This is to assist the persons following the course to classify their knowledge on the subject treated, and to contribute ideas toward the success of the course. A few suggestive titles are "Rules for Planning the Family Dietary," "The Box Luncheon," "A Canning Business for the Farm Home," "Hints on Choosing Textiles," etc. The *Announcer*, a publication of the College of Agriculture of the university, is published for the purpose of acquainting the people of the state with the kinds of work that are in progress at the school, forthcoming bulletins, reading courses, and events and programs of meetings, etc. The February number gives the program of "Farmers' Week," February 9 to 14, to be held at the School of Agriculture. There will be lectures and demonstrations on all conceivable subjects of interest to the farmer and his family. This is real, advanced work in the improvement of health and citizenship, and constitutes a movement which should be copied and extended.

Calomel Fumigation Treatment of Syphilis.—K. S. Krikorian of the American School of Medicine, Beirut, Syria, in a letter in the *Lancet*, Jan. 3, 1914, calls attention to a method of using mercury in the treatment of syphilis, by which a "cure" is said to be effected in a few weeks. Krikorian has watched some of the cases and says that he is surprised at the results. The patient is kept for the greater part of a week in a room tightly closed, and is instructed to employ calomel fumigation and keep the room at a uniform degree of saturation. Patients are allowed to go out occasionally for fresh air, but are required to sleep in the room. It is said that no patient experiences more than a slight salivation. At the end of a week the calomel fumigation is discontinued and the patient is placed on a diet wholly of bread, and infusion of sarsaparilla is given. This is continued for two weeks. Krikorian has seen a number of patients who were relieved of their symptoms in three weeks, and has had brought to his attention a number of patients who remained apparently cured two or three years after such a course.

Medicolegal

Money Paid for Treatment and Medicines Recoverable on Breach of Guaranty of Cure

(Bernard vs. Dr. Nelson Co. et al. (Minn.), 143 N. W. R. 1133)

The Supreme Court of Minnesota finds no grounds for the assignments of error made after a verdict was rendered in favor of the plaintiff for moneys paid for treatment and medicines, he having sufficiently alleged and proved a guaranty of a cure and failure thereof and a proper demand for repayment. The court says that the defendant, without any indication of which defendant it means, there being several, contended that the plaintiff's remedy, if any, was by an action for malpractice, and that this action in the nature of one for money had and received would not lie, because the law does not sanction contracts of the character alleged. His argument was that, as all communications between physician and patient are privileged under the Minnesota statute, the former would not have equal opportunity to defend himself if the latter insisted on the privilege. But the statute merely prescribes a rule of evidence, and does not prevent an action for money had and received to recover money paid by the patient to the physician in consideration of the latter's guaranty to cure him of a certain disease, when such consideration fails. Furthermore, the physician is in no position to urge the statute as a bar to the action when he has been allowed to testify fully in regard to the transactions involved. The court holds the action maintainable.

Again, the defendant complained of a refusal of the trial court to charge the jury that no recovery could be had for moneys paid for the medicines, on the ground that there was no evidence to justify a finding that they were worthless. The court charged that no recovery could be had on this claim unless the jury found that they were in fact worthless. The supreme court finds no error in this regard. The defendant testified, and the other expert testimony was to the same effect, that if the plaintiff, as he claimed, contracted the disease in question not more than three days prior to the making of the first contract, it was curable in from three to six weeks. There was sufficient evidence to uphold the plaintiff's version as to when he contracted the disease, and also a finding that the medicines were used as directed for upward of a year without benefit. The latter was persuasive of worthlessness, and justified the trial court's action and the verdict rendered.

Liability for Malpractice in Repeatedly Cutting Away Tissue Growth in Nostril—Requirements of Specialists

(Colcman vs. Wilson (N. J.), 88 Atl. R. 1059)

The Court of Errors and Appeals of New Jersey reverses a judgment rendered for the defendant, who was sued for malpractice by the administratrix of one Coleman. The court says that the defendant was a physician who made a specialty of diseases of the eye, nose, ear and throat, who was consulted by Mr. Coleman concerning an obstruction in his left nostril, to remedy which an operation was performed by the defendant. The operation consisted in the separation of the turbinated bone from the septum or central partition of the nose to which it had become adherent, and the removal of portions of the bone, together with some tissue that protruded from above into the nostril. It was not claimed that this operation was unnecessary, or that it was unskilfully performed, or that it in and of itself caused the death of the patient, which occurred eighteen days later from an inflammation of the coverings of the brain. It was, however, an indubitable fact that the patient died under the after-treatment conducted by the defendant, and that such after-treatment consisted in great part of the repeated cutting away by the defendant of a tissue growth that kept forming in the nostril at or near the site of the original operation. The defendant himself testified that when this growth kept coming back as fast as he cut it away he "began to become suspicious it was a malignant growth," and thereafter continued to cut it away under that impression; and that there was testimony that if the growth was malignant its removal was proper. On the other hand, there was testimony that if such growth was not malignant, but a normal product of the inflammatory process set up by the operation, its removal was not proper and might have been the efficient cause of the condition of which the patient died, and a jury might have so found. It was also clearly a jury question under the testimony whether the rapidly forming tissue removed by the defendant was such a natural barrier, or whether it was a cancerous growth, as he suspected it to be. It was not enough, however, for the plaintiff to satisfy the jury that the tissue removed by the defendant under the suspicion that it was malignant was in fact healthy tissue that should not have been disturbed; she must go further and show that it was negligence for the defendant to operate for the removal of this tissue without ascertaining its real nature or employing the means at his command to that end by causing a pathologic analysis of such tissue to be made before continuing to remove it.

This was largely an expert question. When, therefore, counsel for the plaintiff called an expert specialist to the stand and put to him the crucial question, "Doctor, would a reasonably prudent surgeon, if in doubt as to the nature of tissue found on an examination by him, not have a prompt analysis made?" it was error to overrule such question. The reason given for excluding this testimony was that it was outside the issue. The practical result of this ruling was that the case went to the jury, not on the particular negligence which the plaintiff had sought to prove, but on the general question of the failure of proper after-treatment.

Another closely allied error was the refusal of the trial court to charge these requests of the plaintiff's counsel: "(1) Defendant acted as a specialist. As such he was bound to have that degree of skill and knowledge ordinarily possessed by specialists. (2) Defendant as a specialist in this case was bound to have a greater degree of skill and knowledge in the performance of the operation than that which a physician in regular practice is bound to have and exercise." The pertinent rule to be gathered from the cases is correctly stated in 30 Cyc. p. 1571, as follows: "A physician holding himself out as having special knowledge or skill in the treatment of particular diseases is bound to bring to the discharge of his duty to a patient employing him as such specialist, not merely the average skill and knowledge possessed by general practitioners, but that special degree of skill and knowledge possessed by physicians who are specialists in the treatment of such disease, in the light of the present state of scientific knowledge."

The case conclusively showed that the defendant held himself out as a specialist in the treatment of diseases of the nose, and that as such specialist he was consulted by Mr. Coleman on the advice of the ordinary practitioner who had attended him. Under such circumstances, the question whether the defendant was a specialist, while one of fact, was primarily for his own determination, with the result that if he held himself out as a specialist it became his duty to bring to his patients that degree of skill that such a practitioner assumes to possess.

Power of Local Board of Health to Require Bottling of Milk to Prevent Disease

(Board of Health of Covington vs. Kollman (Ky.), 160 S. W. R. 1052)

The Court of Appeals of Kentucky holds that the board of health of the city of Covington had power to adopt a regulation requiring milk for sale in quantities of less than 1 gallon to be handled in sealed transparent bottles. The court says that in cities of not less than 2,500 inhabitants the local boards of health are invested with the same powers as the county local boards.

By sections 2055, 2057 of the Kentucky statutes, local boards are empowered, and it is made their duty, to execute such sanitary regulations as they may consider expedient to prevent the outbreak of cholera, small-pox, yellow fever, scarlet fever, diphtheria and other epidemic and communicab diseases. They are further empowered to examine into all nuisances, sources of filth, or causes of sickness that in their opinion may be injurious to the health of the inhabitants within any county of the state. The court is not inclined to take the narrow view that the board powers thus given can only be exercised by local boards when an epidemic actually exists, or when the cause of sickness is such as to amount to a nuisance. It is well settled that the powers of such boards, conferred for the protection of the public health, should be liberally construed in order to effectuate the purpose of the legislature. The most effective way to prevent disease is to remove the cause thereof. Therefore local boards are given the power not only to prevent the spread of epidemic and communicable diseases, but to prevent their outbreak, and to this end are given the further power to examine into and abate such causes of sickness as may in their opinion be injurious to the health of the inhabitants within any county.

It was insisted that the sale of milk in cans was not shown to be such a cause of disease as to justify the regulation in question, and that to give such a construction to the statute would open the way for health boards to adopt all sorts of fads. In response to the first contention, however, it is sufficient to say that it is a recognized fact that numerous diseases result from the careless handling of milk, and that cans are not as sanitary as sealed bottles. Being the agency created by the legislature to prevent the outbreak and spread of disease, and to remove causes of sickness, the presumption is always in favor of the board of health, and its action will not be interfered with unless it appears unreasonable or oppressive. The fact that its membership may sometimes be composed of extremists is no reason for denying the power conferred by the legislature. Nor should the court be controlled by the fact that a scientific theory of to-day may be discarded tomorrow. In matters affecting the public health it is the part of reason and common sense to adopt the best scientific thought of the age in which we live. If research and investigation lead to other accepted theories, then the court must adopt them. Were the rule otherwise, both the courts and the legislature would be without a competent guide. Viewing the matter in the light of the accepted theories of science at the present time, a regulation of a local board of health requiring milk to be handled in sealed transparent bottles is neither unreasonable nor oppressive.

Testimony as to Physical Condition of Wife in Action Against Husband

(Edwards vs. State (Tex.), 160, S. W. R. 709)

The Court of Criminal Appeals of Texas holds that there was no error, on the trial of Edwards for perjury alleged to have been committed by him in a suit for divorce, in admitting, after he had testified to a natural impotency of the body of his wife, testimony of her father and mother and of a physician who examined Mrs. Edwards after the separation and just before the trial of the divorce suit, and who said that she was a natural woman and had no such growth or defects as testified to by Edwards. The court says that the contention could not be sustained that, because Mrs. Edwards was the wife of the defendant, in the perjury case, her mother and the physician should not be permitted to testify as to her condition in the respects named, as that would be permitting the wife to testify against her husband. It was true that Mrs. Edwards could not be permitted to testify; the law closed her mouth. But to hold, further, that she was not permitted to submit her person to examination and that the persons making the examination were not permitted to testify, would be monstrous. The defendant could testify to any falsehood that he might desire, and the falsity of it could never be shown, if such were the rule. The physician and the mother merely testified to the condition of the sexual organs of Mrs. Edwards from an examination of her person, and that was not permitting the wife to testify. The fact that they were persons of her own choosing might go to the weight to be given their testimony, but not to its admissibility.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

Alabama Medical Association, Montgomery, April 21-24.
Am. Assn. of Pathologists and Bacteriologists, Toronto, Apr. 10-11.
American Surgical Association, New York, April 9-11.
Arizona Medical Association, Tucson, April 21-22.
California State Medical Society, Santa Barbara, April 14-16.
Georgia Medical Association, Atlanta, April 14-16.
Kansas Medical Society, Wichita, May 6-7.
Louisiana State Medical Society, New Orleans, April 20-23.
Maryland Medical and Chir. Faculty, Baltimore, April 28-30.
Mississippi State Medical Association, Columbus, April 14-16.
Missouri Valley Medical Society, Lincoln, Neb., Mar. 26-27.
Nat. Assn. for Study and Prev. of Tuberculosis, Washington, May 7-9.
New York State Medical Society, New York, April 28-30.
Ohio State Medical Association, Columbus, May 5-7.
South Carolina Medical Association, Florence, April 14-16.
Tennessee State Medical Association, Memphis, April 7-9.

NEW YORK ACADEMY OF MEDICINE

Meeting held Feb. 12, 1914

Dr. William P. Northrup in the Chair

Congenital Malaria

Dr. Murray H. Bass: The case I wish to report was first seen Feb. 19, 1913. The infant, aged 7½ weeks, had been fretful since she was 3 weeks of age; she had numerous green stools, vomited occasionally, and had been losing weight. The baby was bright at times while again she appeared dazed and semicomatose. The lymph-nodes, liver and spleen were slightly enlarged, and the abdomen was slightly distended but lax. Examination of the blood showed the presence of plasmodia, and the mother gave a history of untreated malaria during pregnancy. The baby was born in December and was apparently healthy until 1 month old. Under treatment with quinin and iron the child's condition improved rapidly. On the fourth day the plasmodia could no longer be found. The hemoglobin index rapidly rose from 16 to 52 per cent.

Another case occurred about eight years ago in a woman who had suffered from malaria some time previous to the birth of her child, which at the time of birth appeared perfectly healthy. The blood of the infant was examined and showed the presence of plasmodia immediately after birth. After a few doses of quinin the parasites disappeared. Several months later the first child was suddenly taken ill with symptoms of acute intestinal intoxication, and died in convulsions within twenty-four hours. At post-mortem the only abnormality in the gross findings was a very large thymus. There was no hyperplasia of the lymphoid tissues at the base of the tongue or in the follicles of the intestinal tract. The spleen was normal in size and consistency and the mucosa of the intestinal tract showed no injection or erosion. Microscopically, the liver showed a slight grade of beginning diffuse necrosis, the kidneys a moderate degree of nephritis, and the spleen some hyperplasia of the malpighian bodies and considerable pigment through its substance. No malarial parasites were found in the spleen.

DISCUSSION

Dr. Floyd M. Crandall: It seems strange, if the congenital transmission of malaria is possible, that it does not occur more frequently. In a case which I reported in 1892, I believe, everything in the clinical history and findings seemed to give positive proof of the congenital origin of the disease. In this case the child was born during the sweating stage of a malarial paroxysm and appeared to be normal. Eighteen hours after birth it became blue and pinched in appearance and was thought to be dying. The child had a temperature of 102 F. The same thing occurred the following day; the child had in all four successive attacks, each lighter than the preceding one. The plasmodia were found in the blood of both mother and child. I do not see how the case could be other than a congenital one.

Dr. Charles Herrman: Twelve years ago I saw a case which I believe was congenital malaria. The mother had recently come from Italy and gave a clear history of malarial attacks. When 3 weeks of age the baby had attacks of cyanosis followed by fever, though it did not have distinct chills. Plasmodia were found in the blood, and under quinin treatment the attacks disappeared.

Tropical Diseases in Children

Frederick F. Russell, M.D., Major, U. S. A.: Children's diseases in the tropics are very similar to those in this latitude with a few noteworthy exceptions. Diphtheria, scarlet fever, mumps and whooping-cough are not common, measles is more often seen. and chicken-pox is quite prevalent. In most places in the tropics small-pox is so general that it is practically a disease of childhood. The more frequent diseases are diarrheas and dysenteries, eczema, furunculosis, prickly heat, malaria in all its forms, infections with intestinal parasites, and above all syphilis, both acquired and congenital. In the Far East we have beriberi, yaws, and at times cholera and plague. Infections with intestinal parasites are the most important from the practical point of view, not because they are the direct cause of serious disease, but because of their harm to the general health. The circuit followed by intestinal parasites from man to man is quite direct because of the custom of using human ordure as a fertilizer for green vegetables. The commonest worm is the *Ascaris lumbricoides*, almost every native up to middle life being infested. It is customary to administer calomel and santonin twice a year as a routine measure. The most important nematode among children is the hookworm; in countries where it is prevalent almost every native child is infected. Tapeworms and flukes were also rather more prevalent in the tropics than in the temperate zones, the most important being the dwarf tapeworm, *Hymenolepis*. The prevalence of malaria among children gives a ready index to the amount of malaria in a district. The malarial index is readily ascertained by noting the percentage of children with easily palpable spleens. All varieties of malaria occur and the course is more often atypical than not, a fact which is responsible for relapse after relapse until the disease becomes chronic.

One of the most interesting diseases of the East is beriberi, and for years an infantile form has been recognized in breast-fed infants. A typical case in an infant occurs as follows: A young infant of 2 or 3 months, previously healthy, is suddenly seized with paroxysms of pain, during which it straightens out its body and becomes rigid, the abdominal walls and epigastrium becoming tense and hard. The child cries constantly, the face becomes cyanosed and the veins of the neck turgid. The pulse is small and hard. The paroxysm passes off only to recur again and again until death supervenes, in the course of a few days or hours. There is also a chronic form of beriberi with gradual onset and sudden termination. At necropsy the same lesions are found as in adults. The singular point about this disease is the high mortality among breast-fed children; 56 per cent. of the total infant mortality of Manila has been caused by this disease. Tetanus is so common everywhere in the tropics that one has to guard against it even in giving a hypodermic of morphin. All the bacillary forms of dysentery are also common. Bilharziosis infection is common in China, Japan and the Philippines.

Pellagra in Children

Dr. W. J. MacNeal: In pellagra in children the symptoms and lesions are similar to those of the adult; but the involvement of the nervous system is not so marked in children. One seldom sees the toxic psychoses that are encountered in adults. In children the feet are more often involved than in adults.

Pellagra is not a very important cause of serious illness or death in children, but the common occurrence of this disease in children is a very important feature of the general problem of pellagra. In a population of 6,600 people in endemic foci of the disease in South Carolina, there were 882 females and 1,005 males under 10 years of age. During the two years 1912 and 1913 there developed in this population 91 new cases of pellagra and twenty-three of these new cases occurred in the female children and twenty-five in the male children. In the transmission from family to family the children seem to play an important part.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Is It Desirable at This Time to Fix a Date for Two Years Preliminary College Work?

Dr. Egbert Le Fevre, New York: It is unwise at present for this association to demand two years of college work as a minimum entrance requirement. We are just starting on the one-year college work requirement, and the medical schools are having difficulty in evaluating credentials and arranging for this work. The educational system in the majority of states is such that the prospective medical student after graduating from a high school cannot go into a university and get this one year of required college work. It was necessary for us to organize this special one-year course in order to meet the requirement. Are the difficulties of this one year to be simplified by demanding two years? In individual states and in individual institutions no doubt they will be, but I do not believe that as a college organization we are at present in a position to demand two years of college preparation. The question arises, Are we demanding this work to unburden the curriculum or from a purely cultural point of view? If we are doing it because we want men better prepared to enter on the study of medicine, then one year of the intensive course is sufficient. If, on the other hand, we are considering it from the cultural side, then two years are desirable, provided that the undergraduate schools will arrange their freshman and sophomore courses to meet the requirement. We must have the cooperation of the undergraduate colleges. In New York the high-school student must have an elementary course in chemistry, physics and biology to enter on the study of medicine; therefore, we are able to arrange our courses to give him advanced chemistry, biology and physics. The man who comes from other states where the high schools do not give this work must take it elsewhere. The education department evaluates our one year of college work, and students who are matriculating in our schools must have the medical student's certificate and the endorsement on this certificate by the education department that he has completed one year of college work, so that the education department gives official recognition to our entrance requirements.

DISCUSSION

Dr. Randolph Winslow, Baltimore: We are not in position at present to specify any time at which more than one year of college work may be demanded, certainly not within the next four years.

Dr. E. P. Lyon, Minneapolis: We are making an educational experiment in this one-year plan, and it would be folly to interrupt it before a reasonable conclusion can be drawn from it.

Dr. John M. Dodson, Chicago: It is not possible to administer satisfactorily one year devoted to chemistry, physiology and biology, and it is easy to do it in two. It will not diminish the number of students.

Dr. B. D. Myers, Bloomington, Ind.: There may be a good deal of dissatisfaction during the next two years with the one year of college work. In Indiana nearly all the colleges have adjusted themselves to the two-year requirement. I agree with Dr. LeFevre, however, that this is not the time to require two years of college work by all schools in the association. I believe that it would be wiser to wait.

Dr. Frederick P. Gay, Berkeley, Cal.: Two years is the necessary period for the introduction to science that is required, because the work of three laboratory subjects is too much for one year.

Dr. A. L. Gray, Richmond, Va.: The colleges in our section are absolutely unable to give the required work in one year.

We cannot enforce a two-year requirement for the coming session, but we propose to make the announcement in the next catalogue.

College Requirements for Admission to Medical Colleges

Mr. Kendric C. Babcock, Chicago: Little needs to be said about the one-year college-work requirement. The fundamental question in interpreting this year's work under present conditions is essentially of the equipment, of teachers and of laboratories. Additional requirement of a second year of college work gives opportunity for the student to pursue his three required sciences with more leisure, and with more definite coordination with other subjects as well as with somewhat more advanced courses. Encouragement should be given to students to take subjects in these two years which would liberalize and socialize the prospective candidate for the practice of medicine. An interpretation of the two-year college requirement for admission must, therefore, be based on this larger idea of the purpose of added time. Breadth and sanity in preparation might well be the motto before those who devise the entrance requirements to the medical school.

Conditions at entrance to a medical school should be permitted only so far as they conform to these three principles: 1. The condition should be such that it may be made up within one year without interference with prescribed work of the first year of the course. 2. The condition should not be so large in quantity as to disarrange the schedule of professional work of the first year in order to make it up. 3. The condition should not be in the whole of any one of the prerequisite science subjects. Applying these principles, it would seem fair to the student and his future work to permit him no more than four semester hours, whether he entered on the one-year or two-year collegiate basis. This means four hours of conditions in a minimum requirement of thirty semester hours for a year of college work, or four hours of conditions in a minimum of sixty semester hours for two years of college work. Such conditions might represent a half year of one of the fundamental sciences or a half year of an elective subject. Such handicap could be overcome by work in a summer school or by a course carried on during a semester or the whole year in the liberal arts department of the university in which the medical student may be registered.

Who Shall Evaluate Entrance Credentials?

Mr. Isaac L. Otis, Entrance Examiner for Maryland: The work of evaluation of credentials should be done by an agency entirely independent of all schools. This should be a state bureau taking care of all the professions, the head of which should receive an adequate salary. The ideal will be attained when there is a national bureau of the highest standard, whose information is complete aand whose certification cannot fail to command respect. My experience has convinced me of the absolute necessity of a national bureau of professional education and licensure. Such a bureau should be a part of a national department of education, with its head a full cabinet officer. The work of such a bureau should be conducted on a plane so high that its certification would be a recognized standard anywhere.

The Student Who Fails and the Student Who Migrates

Dr. John L. Heffron, Syracuse, N. Y.: A student on matriculation complies with the requirements of the college which are in force at the time of his entrance. If at the end of the year he fails to meet the standard of attainment set up by the college, he is required to repeat the work of the year. If the college in the meantime has raised its standard for entrance, it in no way affects the student of a previous year who has failed. Repetition of the work is the penalty for failure, not for having presented an acceptable preparation. If he has exhibited a lack of ability, he should be advised to give up medicine. If a good student because of illness or some other equally valid reason is unable to do the work and must repeat, if he is a first- or second-year student, he is assigned definite problems to work out under the guidance of the heads of the various departments, with the understanding that he must take the usual practical examination given to the regular class. That robs the course of the monotony of repetition.

Our rule for admission to advanced standing is that the applicant must present evidence of a preparation for the medical course identical to that which the class which he desires to enter was required to have, and he must pass examinations in all the subjects of the course which that class has already covered. The graduate in medicine who wishes to receive our degree is given the rating which the board of regents gives his college, provided his preparation for medicine equaled our requirements at the time of his entrance on the study of medicine. If his college is a registered college, he is credited with the four years' work, and if he has passed the state licensure examination, we accept that in lieu of our own examination. If he has not passed a licensure examination, we require him to pass examinations on all the subjects of the course, and to receive our degree he must in addition spend a year in college and take work equivalent to the work of our senior year.

Discussion on Entrance Requirements

Dr. A. Ross Hill, Columbia, Mo.: A student who enters a college of science or arts from the high school with a deficiency in the first or second year has a better opportunity to make it up than has the medical student, because the course is largely elective for the former, while the latter must enter on a hard-and-fast curriculum. Our university, since adopting the two years' advanced standing, has come to the conclusion that it will have to shut down on admitting students with conditions. For one year we have had an officer who evaluates credentials in all departments, which we find to be very satisfactory. I should object strongly to a board of education having anything to do with the administration of admission to a professional school, and I think that probably would be the direction in which we would drift if we had this evaluation done by state officials.

Dr. Egbert Le Fevre, New York: Entering on the medical course with conditions from the college is a very simple matter when a man comes from an institution affiliated with the medical school; but what about the man who comes from a distant college? Who is to examine him when he comes with conditions? Certainly not the professors of the medical school.

Dr. William Pepper, Philadelphia: During the past three years we have not admitted a student with a condition in any of the sciences. With regard to the adjustment of credentials, we have a council on admission to the medical school consisting of three college professors. On the Atlantic coast we have many men coming from foreign countries, and we have no reliable way of adjusting their credentials. The idea of a national central board to settle such matters seems to me a very good one.

Dr. Seneca Egbert, Philadelphia: No school in Pennsylvania will hereafter be permitted to admit a student with a condition of any kind, by ruling of the bureau of licensure.

Dr. W. J. Means, Columbus, Ohio: The most difficult problems present themselves to the independent medical school or the school which is affiliated with or a part of a university, where the arts and science department is not very strong. The academic department is scarcely in position to evaluate credentials properly. In Ohio the evaluation of the high-school credentials is done under the direction of the State Medical Board, and I think it is generally conceded that it is well done. The basis is fifteen units and no conditions. The evaluation of the additional college credential is taken care of by the individual universities, and satisfactorily so. I believe that this association should demand, where there is no state control, that there should be some regulation by which these credentials are examined by and under the authority of the board of medical examiners of the state in which the college is located, or by the authorized examiner or some other authority, as specifically set forth in the constitution of this association. It is difficult for a student to go on with his medical course with science conditions, because he cannot make them up during the college year. If we do allow conditions, we must make provision for their removal.

Mr. **Frank Landacre**, Columbus, Ohio: The question is, Who shall adjust the credentials, the medical faculty or the entrance board of the university? In Ohio we have no entrance board. The students are registered by a subofficer. The deans have nothing to say. The medical men must make some rules as to entrance conditions. If you are going to accept the colleges of the North Central Association or the Ohio College Association or any other recognized association, say so, and we will accept your ruling. Otherwise, the university authorities must use their own judgment in the matter. State boards and college authorities must be given definite standards for working.

Dr. **Brown Ayres**, Memphis, Tenn.: Universities are trying to get in line with the requirements of the various national bodies. We must be specific in our requirement, name the subjects, the credits, the minimum, and then rest for a sufficient number of years to get the schools accustomed to the idea.

Dr. **B. R. Shurly**, Detroit, Mich.: What are we going to do with the men who come from schools that offer no biology? Are we going to turn them away, or shall we be allowed to accept a biologic certificate from the advanced course in our high schools? Are we allowed to accept men who have taken a postgraduate course in the high school which provides such a course?

Dr. **Irving S. Cutter**, Lincoln, Neb.: In order to crystallize this discussion, I would move that a committee of three be appointed to draw up resolutions covering these points: first, the evaluation of the college year, and, second, the granting of conditions in either preparatory or college work. [Such a committee was appointed, reported, and its report was accepted.]

Mr. **John Loman**, Entrance Examiner for Pennsylvania: All papers presented for admission to the first year of a course in medicine should be adjudicated by state authorities. The state demands certain preliminary requirements, and the state should see to it that the applicant can meet the requirements. The state can establish a bureau and develop it to a high degree of efficiency, entirely free from political influence. It should be informally articulated with similar bureaus in other states, with the United States Department of Education and the United States Consular Service, so that credentials from foreign countries could be evaluated properly. We want efficiency and we may safely trust the state to see that efficiency is obtained.

Report of Committee on Medical Research

Dr. **Eugene L. Opie**, St. Louis: The committee urges on the medical schools the wider use of post-mortem examination as a means of increasing the value of clinical practice, teaching and investigation. The committee also recommends the endorsement of the resolution adopted by the Federation of American Societies for Experimental Biology, Dec. 31, 1913.

State Board Examinations

Dr. **H. U. Williams**, Buffalo, N. Y.: My experience as an examiner has convinced me that students have a superficial knowledge of facts. They fail to grasp principles, and quiz compends or quiz classes are resorted to frequently in preparation for examination. In order that methods of teaching may be made effective, the knowledge of facts required of students should be selected carefully and limited to those that are essential. The remedy lies in reducing the importance of written examinations and in making practical tests more important.

Talking.—People who are clumsy in the use of spoken language try to make good their deficiencies by more or less grotesque gestures, emphasis and attitudes. The symbolic act is then evidence partly of ineptitude. But, on the other hand, a man's acts may beautifully convey what words are too poor to express.—Cabot: What Men Live By.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

February, I, No. 8, pp. 539-602

1 Cultivation of Malarial Plasmodia in Vitro. C. C. Bass, New Orleans.
2 *Emetine in Amebic Dysentery. W. Allan, Charlotte, N. C.
3 Annual Report of the Hot Springs, Arkansas, Health Department. W. H. Deaderick, Hot Springs, Ark.
4 *Cultivation of the Bacillus of Leprosy; A Review. P. G. Woolley, Cincinnati.
5 Case of Dhobie Itch (Tinea Cruris). W. L. Culpepper, New Orleans.

2. **Emetin in Dysentery.**—From Allan's brief summary of the literature it is evident that, with few exceptions, everybody has reported simply immediate results, and sufficient time has not yet elapsed to tell whether or not these cures are permanent. At present emetin hydrochlorid and hydrobromid are the salts used. The size of the dose has varied from 1/4 to 6 grains. It is being given by mouth, by rectum, subcutaneously and intravenously. It is being given daily in single or several doses, on consecutive days, on alternate days, and irregularly. Most observers have discontinued the use of the drug as soon as the clinical symptoms have cleared up, or shortly after the amebas have disappeared from the stools.

Allan's limited experience has served to convince him that small doses, repeated daily or almost daily, for a few days, are not sufficient to eradicate the ameba, for more than half of his cases have relapsed within the first year after treatment. Allan thinks it better to give maximum instead of minimum doses; that is, 2 to 3 grains instead of 1/2 to 1 grain. The necessity for intermittent treatment is emphasized. Rest in bed and restricted diet seem unnecessary except in the severest cases.

4. **Cultivation of the Bacillus of Leprosy.**—A review of the literature convinces Woolley that each investigator believes he has cultivated the cause of leprosy, and that none of them have proved it, and further that a deal of work remains to be done.

Annals of Surgery, Philadelphia

March, LIX, No. 3, pp. 321-464

6 *Prostatism. H. Wade, Edinburgh.
7 *Suprapubic vs. Perineal Prostatectomy. J. B. Deaver, Philadelphia.
8 Prostatectomy in General Surgical Practice. H. Lilienthal, New York.
9 *New Method of Exposing Lower End of Ureter. E. S. Judd, Rochester, Minn.
10 Rectovesical Echinococcus Cyst. J. B. Squier, New York.
11 Rupture of Penis. A. O. Wilensky, New York.
12 Post-Operative Ileus. A. McLean, Detroit.
13 Intestinal Obstruction Resulting from Malignant Tumor of Retained Testis Abdominis. T. S. Tirumurti, Madras, India.
14 Obstructive Pelvic Lesions Associated with Chronic Diverticulitis. Report of Five Cases. G. E. Shoemaker, Philadelphia.
15 Case of Arthroplasty on Knee-Joint. H. R. Owen, Philadelphia.
16 Paralytic Toe-Drop, Putti's Operation for Its Relief. J. T. Rugh, Philadelphia.

6. **Prostatism.**—Three outstanding varieties of disease, Wade says, lead to prostatism: (*a*) Prostatic hypertrophy or chronic lobular prostatitis; (*b*) prostatic fibrosis or chronic interstitial prostatitis; (*c*) prostatic carcinoma. The first was present in 82 per cent. of the specimens examined by Wade. Chronic lobular prostatitis is in his opinion a senile hyperplasia, an aberrant overgrowth of tissue that is not the result of the appearance of an independent new growth, but is liable to develop into the same. Chronic lobular prostatitis in the majority of cases produces prostatic hypertrophy. It virtually always develops in the middle lobe and is almost uniformly confined to the middle and lateral lobes. The gland in consequence undergoes changes that usually permit of its easy removal by suprapubic prostatectomy. Chronic lobular prostatitis may develop in and be confined to the anterior lobe, this being noted by Wade in one case. Chronic lobular prostatitis may cause prostatism without enlargement of the organ, intravesical herniation or complete false capsule forma-

tion. In these cases the performance of suprapubic prostatectomy is difficult and dangerous.

The successful performance of suprapubic prostatectomy, in Wade's opinion, depends on the presence of an advanced type of prostatic hypertrophy due to chronic lobular prostatitis. The recognition of this is clinically frequently very difficult. When a patient with this advanced type of disease is operated on his urinary tract and general health have usually suffered serious damage from the disease. It is therefore unjustifiable to delay operation in an early case of chronic lobular prostatitis in order to permit of the gland undergoing those hypertrophic changes that facilitate its easy removal by suprapubic prostatectomy.

The mortality attending suprapubic prostatectomy is mainly due to the impaired health of the patient prior to operation. The actual cause of death in such cases is usually a local infection arising out of the wound inflicted. The operation of suprapubic prostatectomy by blind enucleation, Wade says, is unsuitable in cases of prostatism due to other causes than advanced chronic lobular prostatitis. Perineal prostatectomy is a most suitable operation for such cases. Perineal prostatectomy permits of the removal of the disease when its presence is diagnosed in all cases. It is, therefore, at present the operation that offers the best prospect of further advance in the treatment of prostatism. For its successful performance an accurate knowledge of the anatomic structure and relationships of the prostate are necessary as well as an understanding of the pathology of the disease. The suprapubic transvesical method of prostatectomy by visual dissection offers the prospect of developing into a method of treating prostatism that may ultimately warrant its adoption in a large number of cases.

Chronic interstitial prostatitis is best treated by division and removal of the constriction by the transurethral route. Prostatic carcinoma may be in an early case clinically indistinguishable from hypertrophy due to chronic lobular prostatitis. This fact is therefore a further reason for early operation in all such cases. Prostatic carcinoma when recognized clinically may be successfully treated by excision of the gland in suitable cases.

7. **Suprapubic vs. Perineal Prostatectomy.**—The advantages of the suprapubic over the perineal operations Deaver says are as follows: The approach to the prostate is simple and *practically bloodless. The enucleation of adenomatous growths* is accomplished with ease. The working field is large and under perfect control. The prostate is accessible and can be made more so by digital pressure on its rectal surface and without the danger of injury to the bladder from the use of tractors necessary in the perineal operation. The muscular control of the bladder is not disturbed, since the internal sphincter may be avoided and the compressor urethra lies outside the line of cleavage. Incontinence is therefore less frequent following this technic. Permanent fistulas are less frequent after the suprapubic operation. They never occur in fact if the urethra is bougied. Stones can be more easily removed. Sexual potency is maintained as frequently after the suprapubic operation as after the perineal, and the question of sterility is rarely of any consequence. The mortality is, in properly selected cases, no greater and the percentage of uncomplicated cures is larger.

9. **Method of Exposing Lower End of Ureter.**—The method described by Judd of approaching the lower part of the ureter has been employed in operating on six cases. The first patient operated on was a boy 18 years of age with diverticulum of *the bladder. A median suprapubic incision was made from the* symphysis to the umbilicus, extending through the fascia between the recti muscles down to the peritoneum. The peritoneum was not opened but was brushed back from the fundus of the bladder in the usual way, the bladder lifted well forward and opened after the suprapubic space had been packed off with gauze. The bladder was opened in order to explore and pack the diverticulum to facilitate in removing and also to determine if possible the relationship of the diverticulum and ureter so that the ureter would not be injured in removing the pouch. This, however, could not be satisfactorily accomplished from within the ladder, and with the wall of the left side of the bladder held firmly by an assistant, dissection was carried down to the base of the bladder, exposing and freeing the ureter for 2 or 3 inches. The ureter was held to one side while the diverticulum was separated from the surrounding fatty tissue and removed. The opening in the bladder was closed with the ureter in sight so that it could not be injured or its lumen interfered with. The entire wound healed practically by primary intention and the patient was up and around in ten days and made a complete recovery.

In the second and third cases the operation was performed for stones in the lower ureter. The ureter was exposed as in the preceding case with the diverticulum, except that the bladder was not opened. Besides these two cases of stone in the ureter and the one of diverticulum of the bladder, the method has been used to expose the ureter in three cases of extraperitoneal resection of the bladder for cancer.

Arkansas Medical Society Journal, Little Rock

February, X, No. 9, pp. 219-241

17 Importance of Lumbar Puncture in Diagnosis of Syphilitic Nervous Lesions. E. P. Bledsoe, Little Rock.

Boston Medical and Surgical Journal

March 5, CLXX, No. 10, pp. 333-368

18 Relation of General Hospital to Training School for Nurses, H. M. Hurd, Baltimore.
19 *Relationship between Epilepsy and Migraine. G. A. Waterman, Boston.
20 Roentgenographic Study of the Mastoid. O. A. Lothrop. Boston.
21 Laboratory Physiology in College and in Medical School. A. D. Bush, Burlington, Vt.
22 *Cancerous Ascitic Fluid in Uterine Carcinoma. R. M. Green and F. C. W. Konrad, Boston.

19. **Relationship between Epilepsy and Migraine.**—Waterman *points out that one cannot review the statistics of various* authors which describe the frequent interchange of epilepsy and migraine in different generations of the same family without being convinced that they indicate a definite relation between the two diseases. The cases seen by him in which substitution of one neurosis for the other occurs in the lifetime of the individual have convinced him of the existence of this relationship. He also believes that one must accept in considering the relationship of cases in which bromid treatment of epileptic fits changes the clinical picture of the attack from that of epilepsy to that of migraine. Symptoms of epilepsy in an attack of migraine may indicate the existence of a relationship between the two diseases in that attack, and need not, according to the dictum of Moebius, stamp that attack as essentially epileptic.

22. **Cancerous Ascitic Fluid in Uterine Carcinoma.**—Six patients were treated with cancerous ascitic fluid. An abundance of such fluid was obtained from one of the cases, and with this were made autogenous inoculations in her case, and heterogenous in five other patients. The treatment was continued in some instances over a period of four months. The reporting of this series of cases has been delayed for two years, in order that final results might be recorded, so far as obtainable. These cases all showed a slight and irregular elevation of temperature, which, however, bore no apparent relation in its oscillations to the injections of cancerous ascitic fluid, but seemed rather to be due to septic absorption from the ulcerating surface of the cancer.

The results obtained correspond with those obtained at the Massachusetts General Hospital. Three cases gave no apparent reaction; two patients, according to their own statement, *were relieved of pain and improved in general physical* condition; the third showed an apparent temporary relief of pain, and the tumor was apparently caused to slough, as evidenced by the tissue passed per vagina. Four of the patients died of the disease and apparently without retardation. Two others were discharged and lost to observation.

That the injections of serum do have a beneficial effect the authors believe can hardly be doubted, but whether this effect is due simply to a serum isotonic with the blood and acting as a stimulant or whether the reaction is specific, remains still to be proven. Patients with extensive cancer are usually cachectic and ill nourished, and therefore it is easy to conceive that the injection of a highly nutritive fluid, saline and isotonic with the blood, would have a stimulating effect and aid in the improvement of the general condition, and thus probably also the resistance to the inroads of the cancer. The reaction, however, is slight, very temporary and shows slight or no specificity.

Bulletin of the American Academy of Medicine, Easton, Pa.

February, XV, No. 1, pp. 1-64

23 *Inheritance as a Factor in Criminality. E. R. Spaulding, South Framingham, Mass., and W. Healy, Chicago.
24 Influence of Publicity on Crime. W. B. Stewart, Atlantic City, N. J.
25 Physical Character of Crimes of the Alcoholic. T. D. Crothers, Hartford, Conn.
26 Relation of Physical Defect to Delinquency with Special Reference to the Hennepin County Juvenile Court. H. D. Newkirk, Minneapolis.
27 Truancy the Kindergarten of Crime. B. Hall, Milwaukee.

23. **Inheritance as a Factor in Criminality.**—In the study of 1,000 cases the authors can find no proof of the existence of hereditary criminalistic traits, as such. They do not absolutely deny such inheritance, but judging by their studies, they feel that careful observations elsewhere will bring forward evidence rather against such a theory than in favor of it. On the other hand, through studies of the eugenists, and advances in medical and psychologic knowledge, crime will be found indirectly related to heredity in ways most important for society to recognize. The underlying foundations of criminalism are the evils to combat. As existing apart from definite and discoverable mental, physical or environmental causations of criminalistic behavior, they regard the idea of bare criminalistic traits, especially in their hereditary aspects, as an unsubstantiated metaphysical hypothesis.

Colorado Medicine, Denver

February, XI, No. 2, pp. 31-68

28 Chronic Intestinal Stasis, "Autointoxication" and Subinfection. J. G. Adami, Montreal.
29 Traumatic Sarcoma. O. M. Shere, Denver.

Delaware State Medical Journal, Wilmington

January, V, No. 2, pp. 1-26

30 Surgical Treatment of Tuberculosis and Other Infections of *Joints. J. J. Jones, Wilmington.*
31 Two Peculiar Cases. R. B. Hopkins, Milton.

Illinois Medical Journal, Chicago

March XXV, No. 3, pp. 137-212

32 Case of Membranous Pericolitis—Diagnosis Confirmed by Roentgenography and Laparotomy. A. P. Heineck, Chicago.
33 Injections of Alcohol for Pain in Tubercular Laryngitis. D. A. Vanderhoof, Colorado Springs, Colo.
34 Some Complications in Obstetric Practice. A. Hall, Mt. Vernon.
35 Obstetrics in General Practice. F. D. Hollenbeck, Chicago.
36 Who Will Discover the Causes of Youthful Insanity? B. Holmes, Chicago.
37 Infantile Cerebral Palsies. H. G. Hardt, Chicago.
38 Forty Years' Experience in Construction and Administration for Insane in Middle West. R. Dewey, Wauwatosa, Wis.
39 Need of Plan to Eliminate Mentally Unfit from Service in *Transportation Companies. T. Diller, Pittsburgh, Pa.*
40 Causes of Acquired Insanity. J. C. King, Atlanta, Ga.
41 Acute Alcoholic Insanity. W. F. Lorenz, Mendota, Wis.
42 Origin of Boas-Oppler Bacillus in Gastric Carcinoma. A. E. Gammage, Chicago.
43 *Simple Method of Preparing Catgut. E. M. Sala, Rock Island, Ill.
44 Prevention of Blindness Caused by Ophthalmia Neonatorum. A. L. Adams, Jacksonville, Ill.

43. **Simple Method of Preparing Catgut.**—The method Sala offers is the use of two different solutions, one for sterilization and one for preservation. The clean gut, which has been already prepared for sterilization, is twisted or rolled in lengths suitable for suture material and placed in glass-stoppered bottles containing full strength Harrington's solution. The gut is left in this solution for ten hours. It is then poured off and the sutures washed in Oehsner's solution. Sutures are then transferred to bottles containing Oehsner's solution, *which is as follows: Iodoform,* 1 part; ether, 5 parts; alcohol, 14 parts. Sutures remain in this solution until needed for operations.

The gut becomes well impregnated with iodoform and is pliable and nice to work with. It should not be left in iodoform solution much over three months, because the iodin ultimately destroys its tensile strength, but Sala has used some gut that has remained in the solution as long as twelve months, and it still was good, strong gut.

Journal of Experimental Medicine, New York

March, XIX, No. 3, pp. 223-316

45 *Relation to the Blood and Virus of Epidemic Poliomyelitis. P. F. Clark, F. R. Fraser and H. L. Amos, New York.
46 Relation between the Fat Content of the Bile and Fatty Changes in the Liver. E. R. Le Count and E. R. Long, Chicago.
47 *Soaps as Ferment-Inhibiting Agents. J. W. Jobling and W. Petersen, Chicago.
48 *Ferment-Inhibiting Substances in Tubercle Bacilli. J. W. Jobling and W. Petersen, Chicago.
49 *Nitrogen Retention in Blood in Experimental Acute Nephritis. H. T. Karsner and W. Denis, Boston.
50 **Nitrogen Retention Following Repeated Injections of Nephro*toxic Agents. H. T. Karsner and W. Denis, Boston.
51 *Specificity of Cytotoxins. R. A. Lambert, New York.
52 An Experimental Study of Histogenesis of Miliary Tubercle *in Vitally Stained Rabbits. H. M. Evans, F. B. Bowman* and M. C. Winternitz, Baltimore.
53 Indophenoloxydase Content of Tissues from Rabbits Infected with Pneumococcus. F. Medigreceanu, New York.
54 Comparative Study of the Rate of Proteolysis of Tissues Obtained from Rabbits Infected with Pneumococci and of Tissues from Normal Rabbits. F. Medigreceanu, New York.

45. **Relation to the Blood and Virus of Epidemic Poliomyelitis.**—Specimens of human blood taken by the authors during the paralytic stage of poliomyelitis and post mortem have *proved not to be capable of infecting Macacus monkeys.* Specimens of monkey blood taken at various stages of experimental poliomyelitis have not proved as a rule to be capable of infecting monkeys. In a single instance, among ten tests, infection was secured with a specimen of blood removed at the beginning of the paralysis on the seventh day following an intracerebral inoculation.

When suspensions of the spinal cord from a paralyzed monkey have been injected into the brain, or simultaneously into the brain and spinal canal, the blood removed from one to forty-eight hours later failed to cause paralysis after intracerebral injection.

When large volumes of active filtrate are injected into the circulation the blood remains infective for seventy-two hours at least, but may be no longer infective after ten days, when the paralytic symptoms first appear. When, however, the filtrate is injected in smaller amount or when a filtrate of a less active virus is employed in large quantities, the blood either fails to convey infection or conveys it irregularly. It is only when overwhelming quantities of an active virus are injected into the blood that paralysis results. The injection of moderate doses is not followed by paralysis, although the virus may still be detected in a blood-sample twenty-four hours after the injection.

The existence of a mechanism capable of excluding the virus within the blood from the central nervous organs is therefore inferred. Infection is accomplished far less readily through the circulation than by means of the more direct lymphatic and nervous channels of communication with the central nervous system. Several series of feeding experiments conducted with the biting stable fly (*Stomoxys calcitrans*) resulted negatively.

47. **Soaps as Ferment-Inhibiting Agents.**—Jobling and Petersen found that sodium soaps prepared from olive oil, croton oil, cod-liver oil, linseed oil, etc., have the property of inhibiting the action of *trypsin and leukoprotease, and that the* activity of these soaps is dependent on the degree of unsaturation of the fatty acids and is in proportion to their iodin value. Saturation of the acids with a halogen (iodin) causes a loss of the property. Soaps of the saturated fatty acids tested did not have this influence on ferments.

48. **Ferment-Inhibiting Substances in Tubercle Bacilli.**—Jobling and Petersen demonstrated that tubercle bacilli contain unsaturated fatty acids which when saponified have the property of inhibiting the action of trypsin and leukoprotease. In proportion to their iodin value these soaps are more active as inhibiting agents than the soaps prepared from linseed, olive and cod-liver oils. The activity of the soaps is dependent

on the presence of unsaturated carbon bonds. Saturation of the soaps with iodin destroys their inhibiting action. The authors suggest that soaps probably play an important part in the production of the condition known as caseation in tuberculosis.

49. **Nitrogen Retention in Blood in Experimental Acute Nephritis.**—The interpretation of these experiments by Karsner and Denis appears to throw more stress on tubular change as determining nitrogen retention.

50. **Nitrogen Retention Following Repeated Injections of Nephrotoxic Agents.**—By means of repeated injections of uranium nitrate Karsner and Denis produced in the cat a subacute or chronic nephritis which can progress to a fatal termination and show in its course increased accumulation of non-protein nitrogen in the blood. This nephritis differed only slightly from the spontaneous chronic nephritis of the species. Repeated doses of diphtheria toxin produced a subacute form of nephritis with only temporary or slight retention, but nevertheless anatomically a well-defined nephritis. The spontaneous nephritis studied resembled more closely that produced by uranium nitrate than that produced by diphtheria toxin, both histologically and from the standpoint of blood analysis.

51. **Specificity of Cytotoxins.**—The plasma of guinea-pigs treated by Lambert by injections of rat sarcoma exhibited a toxic action in tissue culture preparations on the cells of both rat sarcoma and rat embryo skin. Similarly, the plasma of guinea-pigs immunized by injections of rat embryo skin was toxic for cells of both types. Injection of rat blood immunized against both sarcoma and embryo skin, although not so strongly as injections of the two tissues. Guinea-pigs receiving injections of either chick embryo heart or intestine developed cytotoxic substances for both of these tissues. These findings are interpreted by Lambert as tending to show that cytotoxins formed after the injection of different body tissues into a foreign species are to no extent specific for the tissues injected.

Journal-Lancet, Minneapolis

March 1, XXXIV, No. 5, pp. 121-146

55 Interrelationship of High Blood-Pressure and Renal Disease. E. L. Tuohy, Duluth.
56 Accident Neurosis. J. M. Lewis, Minneapolis.
57 Chronic Multiple Arthritis. E. S. Geist, Minneapolis.
58 Gastric and Duodenal Ulcer; Recognition and Treatment. T. W. Stumm, St. Paul.
59 Meningitis Following Measles and Pneumonia, Ending in Recovery with Multiple Abscess Formation. J. Farrage, Deering, N. Dak.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

February, XXXXI, No. 2, pp. 65-135

60 Silas Weir Mitchell; His Place in Neurology. C. K. Mills, Philadelphia.
61 Cephalograph: New Instrument for Recording and Controlling Head Movements. A. Knauer and W. J. M. A. Maloney, New York.
62 *Experimental Study of Intraneural Injections of Alcohol. A. Gordon, Philadelphia.

62. **Experimental Study of Intraneural Injections of Alcohol.**—In his experiments Gordon found that there is a difference in histologic changes when alcohol is injected into a motor, a sensory or a mixed nerve. A motor nerve is considerably less influenced by the intimate contact with alcohol than a sensory or a mixed nerve. Functional recovery follows in cases of injections into a motor nerve. In cases of sensory or mixed nerves, persistent sensory, trophic and motor disturbances follow injections of alcohol. In cases of motor nerves the gross nerve-bundles are not affected. Only the perineural connective tissue suffers, but then a condition of repair is evident in cases of long standing.

In cases of sensory or mixed nerves the histologic changes are very conspicuous, not only after recent injections (nine days) but also long after the first injections (twenty-nine days). Not only the nerve-bundles themselves but also their respective ganglia (gasserian and spinal), show distinct evidences of degenerative changes. In therapeutic management of affections of nerves, Gordon warns that the above difference in the susceptibility of motor and sensory nerves to the effect of alcohol must be borne in mind. Otherwise irreparable damage may be done to muscles and limbs supplied by those nerves.

Kentucky Medical Journal, Bowling Green, Ky.

February 15, XII, No. 4, pp. 131-166

63 Some Experience with Phylacogens. O. W. Doyle, Louisville.
64 *The Cause of Inguinal Hernia, with Special Reference to Relation of Long or Main Axis of Abdomen to Its More Frequent Occurrence on Right Side. F. T. Fort, Louisville.
65 Putrefactive Phlegmon. C. G. Forsee, Louisville.
66 Councilors in County Organization. C. Graham, Henderson.
67 Necessity of County Medical Societies. B. S. Rutherford, Bowling Green.

March 1, XII, No. 5, pp. 167-188

68 *Diagnosis and Medical Treatment of Gastric and Duodenal Ulcer. C. G. Lucas, Louisville.
69 *Diagnosis and Indications for Operation in Gastric and Duodenal Ulcers. A. D. Wilimoth, Louisville.
70 Diagnosis in Genito-Urinary Diseases; Its Neglect; Its Urgent Necessity; Methods by Which Its Requirements May Be Met. B. Lewis, St. Louis.
71 Osteomyelitis. A. W. Davis, Morton's Gap.
72 Early Diagnosis of Tuberculosis. T. C. Nichols, Morgan.
73 Pyemia. J. E. L. Harbold, La Grange.
74 Diagnosis, Quarantine and Treatment of Scarlet Fever. R. B. Cassady, La Grange.
75 Diagnosis of Appendicitis. R. B. Cassady, La Grange.
76 Acute Poisoning. J. T. Dixon, Owensboro.

64. **Inguinal Hernia with Reference to Long Axis of Abdomen.**—Fort concludes that all inguinal hernias are due to a congenital weakness. Right inguinal hernia is more frequent than left on account of the more frequent incomplete closure of the right inguinal canal caused by lack of pressure from behind and the right side of the pelvis being larger than the left. When there exists a congenital inguinal weakness plus a splanchnoptosis a very slight jar or misstep will cause a knuckle of bowel to descend into a patent opening, producing very little if any shock. If force enough could be applied to produce a traumatic hernia there would be great surgical shock immediately following. The peristaltic wave being from left to right, the larger side of the pelvis being the right, the attachment of the mesentery being from left to right and the left leaflet of the diaphragm being freer to act than either of the other leaflets, the long axis of the abdomen changes when force is applied from above from the central line of the body to a line which might be drawn from above downward from left to right.

68, 69. Abstracted in THE JOURNAL, Sept. 20, 1913, p. 989.

Lancet-Clinic, Cincinnati

February 18, CXI, No. 10, pp. 239-264

77 Non-Suppurative Diseases of Labyrinth. Von Eicken, Giessen, Hesse, Germany.
78 Clinical Significance of Diastolic Pressure Variations with Especial Reference to Hypertension and Cardiac Overload. W. J. Stone, Toledo.
79 Conservative Treatment of Urethral Stricture and Its Complications. R. W. Staley, Cincinnati.

February 21, CXI, No. 8, pp. 211-238

80 Roentgenologic Findings in Malignant Obstruction of Colon. J. T. Case, Battle Creek, Mich.
81 Teaching of Sex Hygiene in Our Schools. F. Heiermann, Cincinnati.
82 Painless Surgery—(Anocithesia). C. A. L. Reed, Cincinnati.

Medical Record, New York

March 7, LXXXV, No. 10, pp. 415-460

83 Roentgenographic Observations on Colonic Peristalsis and Antiperistalsis; Function of Ileocolic Valve. J. T. Case, Battle Creek, Mich.
84 Simple Subcutaneous Cut to Cure "Trigger-Finger" or "Snap-Finger." R. Abbe, New York.
85 *Bacterial Cause of Peritoneal Adhesions; the Bacillus Adhesioformis. A. Bassler, New York.
86 Sprain Fracture of Os Calcis. A. O. Wilensky, New York.
87 An Appliance for Introduction of Instruments into the Stomach: M. Einhorn, New York.
88 First Observed Cases of Friedreich's Ataxia in America. J. H. Kellogg, Battle Creek, Mich.
89 Quantitative Colorimetric Analysis in Aid of Clinical Diagnosis. R. Weiss, Basel, Germany.
90 Pathology, Etiology and Diagnosis of Typhoid. G. A. Rueck New York.

85. **Bacterial Cause of Peritoneal Adhesions.**—Bassler made studies in eleven patients who had been operated on in which extensive colonic adhesions were observed, and seven autopsies in which various parts of the gut were carefully sectioned, in all of which the bacteriology of the contents were studied. The organism he found and which he believes

has never been described heretofore is a Gram positive, which may be met with in three shapes, fusiform, sausage-shaped, and a few with square ends. In raw stool specimens a few of them show a spore at one of the ends, and some show a spore at both ends. It is about as thick as the Gram-positive cocci and not quite the diameter of the Gram-positive diplococci. It is about half the size of the *B. aërogenes capsulatus* but is not capsulated. Some of the forms, particularly those having rather square ends, are shorter and resemble those of the coccal type. Most of them have straight sides and cannot be confused with the saprophytic nodulated organisms nor the *B. putrificus*, which is narrower and longer. They occur singly but are only significant in a diagnostic sense when found in groups of a dozen or more, or in great numbers; in some instances there may be as many as a hundred to a field.

In every specimen they never represent the predominant organism of the stools or even those of the Gram-positive forms, and are easily overlooked unless a search for them is made. If a feces extract is made to which peptone and maltose has been added they grow best, but even here with great difficulty. They are not cultivatable by ordinary laboratory methods whatever medium is used and however it is manipulated, neither by the aerobic nor the anaerobic means. Either they are mostly dead when excreted, or, like many of the other intestinal bacteria, are not cultivatable by artificial means. The bacillus is not of the colon or Gram-negative group and is non-motile. It does not vary in size. It does not possess flagella. It is a most exacting anaerobe.

There is, however, a method which Bassler employed in studying it which answers to fair purpose, and that is to make a fluid mush of the stool in question with a normal saline solution by thoroughly macerating the stool in considerable normal saline solution. After a few hours, usually three, this fluid is centrifuged for the purpose of throwing down the solid particles of feces. The supernatant fluid is then passed through a Berkefeld filter until it is sterile of bacteria. Peptone and maltose are then added to it and the media rendered neutral in reaction with sodium carbonate. In this medium, under strictest anaerobic conditions, a sparse growth may be obtained. Bassler has named this organism the *B. adhæsioformis* (adhesion former).

Michigan State Medical Society Journal, Grand Rapids

March, XIII, No. 3, pp. 127-209

91 Transposition of the Uterus and Bladder in Treatment of Extensive Cystocele and Uterine Prolapse. T. J. Watkins, Chicago.
92 Artificial Pneumothorax in Pulmonary Tuberculosis. C. H. Johnston, Grand Rapids.
93 Pulmonary Tuberculosis and Pregnancy. B. R. Schenck, Detroit.
94 Diagnosis and Treatment of Chronic Non-Tubercular Joint Diseases (Rheumatism). F. C. Kidner, Detroit.
95 Suprapubic Prostatectomy. A. McLean, Detroit.
96 Discussion of Heart-Block with Report of Case. M. A. Mortenson, Battle Creek.
97 Biologic Adaptations, Especially as to Fractures. A. S. Kitchen, Escanaba.
98 Typhoid Prophylaxis. R. C. Apted, Grand Rapids.

Military Surgeon, Washington, D. C.

March, XXXIV, No. 3, pp. 201-300

99 Concerning the Freedom of Cebu from Malarial Fever. R. Brooke, U. S. Army.
100 Physical Surveys as Measure for Further Systematizing the Work of Physical Improvement in the Service. H. H. Rutherford, U. S. Army.
101 Malingering. W. N. Bispham, U. S. Army.
102 Tropical Diseases in Philippine Islands. F. Schmitter, U. S. Army.

Mississippi Medical Monthly, Vicksburg

March, XVIII, No. 11, pp. 207-226

103 Serum Therapy. E. W. Hunter, Greenwood.
104 Typhoid Vaccine. J. W. Armistead, Sidon.
105 Tuberculin Therapy. L. F. Barrier, Greenwood.

Modern Hospital, St. Louis

February, II, No. 2, 69-134

106 Plans and Purposes of "Sea View" Tuberculosis Hospital. R. F. Almirall, New York.
107 The German Hospital—Its Relation to State and Public. Grober, Jena.
108 Admission of Patients, History Taking and Subsequent Care. K. H. Van Norman, Baltimore.
109 Causes of and Remedies for Unsatisfactory Hospital Architecture. T. J. Van Der Bent, New York.
110 Money Spent on Hospital Is for Cure of Patients. E. A. Codman, Boston.
111 Evolution of Policy Concerning Tuberculosis Hospitals. J. H. Gifford, Fall River, Mass.
112 Surgical Dressings, Their Preparation and Method of Distribution. E. A. Greener, Muskegon, Mich.
113 Record Keeping at Massachusetts General Hospital. B. Hollings, Cambridge, Mass.
114 Qualifications of the Modern Hospital Superintendent. A. B. Tipping, New Orleans.
115 Some Salient Points in the Construction of Hospitals. F. B. Martin, Washington, D. C.
116 Hospital Attitude Concerning Publicity Through Newspapers. G. P. Ludlam, New York.

New Orleans Medical and Surgical Journal

March, LXVI, No. 9, pp. 655-706

117 *Cesarean Section in Ante-Partum Hemorrhage. Report of Cases. W. Kohlmann, New Orleans.
118 Medical Aspect of Appendicitis. F. T. Gouaux, Lockport.
119 Fractures of Greater Tuberosity of Humerus. I. Cohn, New Orleans.
120 Pellagra. E. R. Harring, Natchitoches.

117. Cesarean Section in Antepartum Hemorrhage.—In cases of central or lateral placenta praevia, pregnancy being at or near term, living child, mother in good condition, cervix closed or only slightly dilated, Kohlmann claims cesarean section ought to be the operation of choice. Such a case came recently under his observation, and he advised the abdominal delivery, which was successfully carried out.. Considering the high mortality of mothers and children, Kohlmann also advised the abdominal delivery, either conservative cesarean or Porro, in case of danger of postpartum hemorrhage, in a case which came under his observation as the safest procedure for the child, and most probably for the mother. The mother made an excellent recovery and left the hospital on the fifteenth day with a living child.

New York State Journal of Medicine

February, XIV, No. 2, pp. 57-118

121 Camphor in Pneumonia. W. J. Cruikshank, Brooklyn.
122 Intestinal Obstruction. W. B. Johnson, Batavia.
123 True Value of Operation for Cancer. E. M. Foote, New York.
124 Need of Individualization in Obstetrics. F. S. Newell, Boston.
125 Efficient Methods in Treatment of Placenta Praevia. J. A. Harrar, New York.
126 Incidence of Renal Involvement in Pulmonary Tuberculosis. H. S. Bernstein, Albany.
127 Cooperation of State Medical Societies in Public Health Education. E. S. Everhard, Dayton, Ohio.

South Carolina Medical Association Journal, Seneca

February, X, No. 2, pp. 395-438

133 Typhoid. R. A. Marsh, Edgefield.
134 Estimation of Blood-Pressure. E. S. Cross, Aiken.
135 Clinical Diagnosis of Nerve Syphilis. J. A. Hodges, Richmond, Va.
136 Surgical Clinics in Europe. H. A. Royster, Raleigh, N. C.
137 General Surgeon and His Work. R. T. Ferguson, Gaffney.
138 Treatment of Chronic Prostatic Obstruction. G. T. Tyler, Greenville.

Vermont Medical Monthly, Burlington

February, XX, No. 2, pp. 27-52

139 *Diagnosis of Septic Endocarditis. W. G. Thompson, New York.
140 Joint Tuberculosis. C. E. Wells, Burlington.

139. Diagnosis of Septic Endocarditis.—In many cases Thompson based the diagnosis of endocarditis on other findings than positive blood cultures, as follows: (1) The persistence of an irregular fever for many months, often being of low grade (from 100 to 101 F.), for weeks at a time, and sometimes with normal intervals of several days. (2) The absence of any other demonstrable lesions than those of the heart, and of any other adequate explanation of the fever than a protracted sepsis. (3) The finding of exceedingly minute petechiae, particularly about the neck and chest, or in the mucous membranes. (4) The development of loud harsh valvular murmurs, often in a heart which seemed normal under earlier examination, or which appears as accentuations of previously existing murmurs. (5) A condition of marked irritability of the heart as shown by overaction, and wide spontaneous fluctuations in the pulse-rate and character, irrespective of the temperature-curve. Thompson emphasizes the probability in many otherwise obscure cases of primary septic infection from a pyorrhea alveolaris.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

February 14, I, No. 2772, pp. 349-408

1 *Nature of Pregnancy and Its Practical Bearings. J. W. Ballantyne.
2 *Antenatal Hygiene: Its Influence on Infantile Mortality. A. Routh.
3 *Method of Producing Rapid and Fatal Intoxication with Bacterial Products. W. J. Penfold and H. Violle.
4 Radical Cure of Procidentia Uteri in Elderly Women. M. Mamourian.

February 21, I, No. 2773, pp 409-460

5 *Appendicitis in Children. H. M. W. Gray and A. Mitchell.
6 Some Observations on Operative Treatment of Fractures by Metal Plates and Screws. W. Sheen.
7 *Congenital Deformity of Femur. C. Maguire.
8 *Case of Chimney-Sweep's Cancer and a Suggestion as to Pathology of Cancer. D. A. Crow.
9 Tuning-Fork and Stethoscope in Estimation of Abdominal and Thoracic Viscera. J. Cantlie.
10 Epidemic Cervical Adenitis with Cardiac Complications. S. T. Pruen.
11 Id. R. Kirkland.
12 Chronically Enlarged Tonsils and Their Treatment. W. J. Harrison.
13 Earache of Obscure Origin. W. Wilson.

1. **Nature of Pregnancy and Its Practical Bearings.**—A general survey of the whole field of pregnancy is made by Ballantyne. He discusses pregnancy regarded as parasitism; the pathological theory of pregnancy; pregnancy as harmonious symbiosis; the maternal response in pregnancy; pregnancy as physiology at high pressure; child-bearing and life insurance; a biological blood-test for pregnancy; the etiology of the maladies of pregnancy; the place of pregnancy and its diseases in the medical curriculum; pregnancy cases in hospital and private practice; prematernity wards and antenatal pathology; prematernity nurses; pregnancy and legislation: pregnancy and eugenics; pregnancy and feminism; pregnancy and high politics.

2. **Antenatal Hygiene: Its Influence on Infantile Mortality.**—The following suggestions are made by Routh: (1) Compulsory registration and notification of stillbirths, and, if possible, notification of abortions. (2) Arrangements by which every poor woman shall have medical supervision during pregnancy. (3) The provision of prematernity wards in every locality, with facilities for conveyance thereto of any pregnant woman found to require hospital treatment. (4) The provision in every general or lying-in hospital in our larger towns and in university clinics of antenatal research laboratories, and so far as may be practicable, of pathologic laboratories in every county and county borough under the supervision of the medical officer of health, where abortions and stillborn children and other products of conception can be systematically and scientifically examined by microscopic and bacteriologic methods, so that we may gradually arrive at a more certain knowledge of antenatal pathology. (5) The adoption of some means by which poor pregnant women can be financially assisted during the later months of pregnancy. This might be done by an extension of the maternity benefit for insured persons under the National Insurance Act, by which every pregnant woman may from the sixth or seventh month of pregnancy receive 5 shillings a week after voluntary notification of her pregnancy to the medical officer of health or her panel doctor. Routh also discusses the reduction of birth-rate; prevention of maternity; antenatal mortality; philanthropic measures; legislation.

3. **Method of Producing Rapid and Fatal Intoxication with Bacterial Products.**—Hort and Penfold (1912) showed that sublethal doses of *Bacillus typhosus* culture become lethal if injected in a large quantity of distilled water. They further showed that if the water be injected first into one vein, and the sublethal dose of culture subsequently into another vein, death results. Evidence is brought forward by Penfold and Violle to show that: The same augmenting effect of distilled water is obtained with cultures of *Vibrio cholerae* and many other organisms, and that it is not due to the original broth employed as the culture medium; it is obtained with cholera toxin or filtrate, and does not require the actual presence of organisms; in the case of *V. cholerae* death is frequently immediate, this immediate death suggesting analogies with the acutest anaphylactic intoxication; if the toxin be injected first and the distilled water two hours afterward, death may result immediately; certain toxic substances do not become more toxic on administration in large quantities of distilled water; lysis of the blood plays a part in the production of these effects.

5. **Appendicitis in Children.**—Out of a total of 200 cases of appendicitis in children under 13 years of age, 126 were admitted and operated on by Gray and Mitchell during an acute attack. The mortality in the acute cases was nineteen, or 15 per cent. This includes one death under an anesthetic. In the chronic and recurrent cases there was no mortality. Two deaths occurred from intestinal obstruction complicating appendicitis, two from subphrenic abscess (one empyema). The other fatal cases were cases of diffuse peritonitis or of multiple abscess. In these cases (with one exception) the symptoms had been present in some degree for several days before admission, and in all of them the patient's general condition at the time of admission was very bad. Two patients developed septic pneumonia several days after admission, and died. In a few cases recovery was complicated by pleurisy, with a moderate amount of effusion which cleared up. In one case a small interlobular empyema was discovered about a month after operation for acute diffuse peritonitis. No case of "ether pneumonia or bronchitis" occurred in the whole series, and no case of "delayed anesthetic poisoning." One case of acute intestinal obstruction occurred two days after operation for acute gangrenous appendicitis. A piece of omentum was found fixed by a fresh adhesion to the lower end of the ileum, and the bowel above this was widely distended. This was relieved by operation, and the patient recovered. The appendix was not removed in any case where there was an abscess adherent to the anterior abdominal wall, nor in several cases of localized abscess not adherent to the anterior abdominal wall. In all the other cases it was removed. In a small proportion of cases (about six), in which drainage had to be carried out for a prolonged period through a paracentral incision, a ventral hernia appeared some time after. A postoperative hernia has not been observed in any case in which a simple muscle-splitting side incision was used, nor in any case in which a paracentral incision was used and was sutured up at the time of operation. The authors emphasize that complaint of abdominal pain, especially when accompanied by sickness, should always provoke most careful inquiry and examination.

7. **Congenital Deformity of Femur.**—The knee-joint in Maguire's case was placed quite close up to the hip, as if there was no femur intervening between the upper end of the tibia and the acetabulum. The leg and foot of the short limb, although thin and small from want of use, were otherwise normal; the sole of the foot reached to about the level of the knee of the fullgrown limb, so that when the patient stood beside an ordinary chair she could support herself firmly by placing the short limb on the seat of the chair. The limb was about 17 or 18 inches shorter than the other; she had fairly good muscular power in it, and could move it about in any direction.

8. **Case of Chimney-Sweep's Cancer and Suggestion as to Pathology of Cancer.**—Crow suggests, among the theories which have been put forward to account for the phenomena of cancer growth as a result of soot irritation, there is one which attributes the new growth to the presence in the soot of a powerful deoxidizing chemical, such as sulphurous acid. If this be the true explanation, Crow says it brings sweep's cancer into line with cancer in other situations, for it is fairly obvious that cancer tends to arise in those tissues which from any cause lack a good supply of oxygen. The following examples are cited: Cancer arising in scar tissue is by no means uncommon; cases are met with in the scars left by

burns or disease, such as lupus; scar tissue in the cervix uteri is very frequently the seat of carcinoma; scars of gastric ulcers are liable to the disease. Again, cancer of the lip and tongue is always preceded by an overgrowth of fibrous tissue from chronic irritation, and this results in a deficient oxygen supply; in the same way cancer will occur in a gall-bladder which has been subjected to chronic irritation from gall-stones. Cancer develops in the sigmoid flexure of the colon after prolonged irritation of hard fecal matter, which must induce a fibrous overgrowth. In the breast fibrous tissue replaces secreting tissue, and the resulting tissues are but poorly supplied with oxygen. Primary growth in the lung, where oxygen abounds, is extremely rare; growth in the liver, which receives a large proportion of venous blood, is usually extremely rapid. Fatty tissue, which at no time of life is richly supplied with blood, is liable to give rise to fatty tumors at any age; whereas it is only when the nutrition of the skin and mucous membrane is becoming impoverished as regards oxygen supply, on account of changes due to degeneration of the vessel walls, that tumor growth in the epithelium is met. If the organism of cancer were demonstrated, and if it were shown to have anaerobic tendencies, the explanation of the predisposition of fibrotic tissues to new growth, in Crow's opinion, would become somewhat more easy to understand.

Clinical Journal, London

February 18, XLIII, No. 7, pp. 97-112

14 Common Errors of Diagnosis in Surgical Urinary Diseases. J. W. T. Walker.

Indian Journal of Medical Research, Calcutta

January, I, No. 3, pp. 385-588

15 Spleen Rate in London Schoolchildren. R. Ross, S. R. Christophers and E. L. Perry.
16 Dose of Venom Given in Nature by a Cobra at a Single Bite. H. W. Acton and R. Knowles.
17 Dose of Venom Given in Nature by Echis Carinata at a Single Bite. H. W. Acton and R. Knowles.
18 Report on Pilgrim Route to Badrinath. G. F. Adams.
19 On Vitality of the Cholera Vibrio Outside the Human Body. E. D. W. Greig.
20 *Experimental Researches on Etiology of Endemic Cretinism, Congenital Goiter and Congenital Parathyroid Disease. R. McCarrison.
21 *Nature of Kurloff Body: A Stage in Development of Eosinophil Leukocyte. H. W. Acton and R. Knowles.
22 *Period before Symptoms when the Saliva of an Animal Incubating Rabies is Infective. J. A. Cruickshank and R. E. Wright.
23 *The Causation of Goiter at Lawrence Military Asylum, Sanawar. R. McCarrison.

20. Experimental Researches on Etiology of Endemic Cretinism, Congenital Goiter and Congenital Parathyroid Disease.—The results of McCarrison's experiments may be summarized as follows: A small proportion (so far as can be ascertained from these data, 4 or 5 per cent.) of the offspring of goitrous parents are born cretins. Approximately 63 per cent. of the offspring of goitrous parents are born with congenital goiter. Approximately 32 per cent. of the offspring of goitrous parents are born with congenital disease of the parathyroid glands. Approximately 33 per cent. of the offspring of goitrous parents are born with normal thyroid and parathyroid glands. Where there is congenital disease of the parathyroid glands there is also congenital disease of the thyroid gland. In rare cases, however, the thyroid is less severely affected than the parathyroids. As congenital parathyroid disease is comparatively common among the offspring of goitrous rats, it is presumable that it is also comparatively common among the offspring of goitrous human beings. Congenital parathyroid disease is due to the action on the fetal gland of the toxic products of anaerobic organisms absorbed from the maternal intestine. Congenital goiter is due to the action on the fetal thyroid of toxic substances derived from the maternal intestine. Cretinism is due to the action on the fetal thyroid of toxic substances derived from maternal intestine. These substances, however, are capable of causing complete destruction of the thyroid gland in only a small proportion of cases. Lesser degrees of thyroid defect may account for the many varying degrees of cretinism met with in goitrous districts, while the parathyroid lesion may be responsible for the nervous symptoms from which many cretins suffer. McCarrison thinks that these results provide the experimental proof of the hypothesis which he put forward in 1908 as to the causation of congenital goiter and cretinism. In a paper, based on a study of 202 cases of cretinism, he drew attention to the intimate relationship which exists between goiter in the mother and the development of cretinism in the child, and indicated that under conditions of maternal thyroidal inadequacy toxic agencies of goiter, circulating in the maternal blood-stream, acted on the developing thyroid gland of the fetus and produced, in a proportion of cases, congenital goiter, and in a still smaller proportion the varying degrees of cretinism. He also drew attention to the previously undescribed nervous symptoms from which about one-third of all cretins suffer, and attributed the condition, which he named "nervous cretinism," to parathyroid defect. He concluded by stating that "the defect in cretinism is one of the whole thyroid mechanism of the parathyroids as well as of the thyroid gland. The diversity of symptoms is due to the extent to which the defect bears on the whole or part of that mechanism."

21. Nature of Kurloff Body: Stage in Development of Eosinophil Leukocyte.—The Kurloff body is found in the bone marrow of widely different animals, birds, amphibians and mammals, and is not confined to the guinea-pig. It cannot, therefore, Acton and Knowles claim, be a parasite, but rather a phase in the development of the eosinophil cell and is identical with the structure known as an archoplasmic vesicle. The Kurloff bodies are, therefore, the bone-marrow representative of the granules of the eosinophil leukocytes, and their appearance in the peripheral blood of the guinea-pig or other animal may be associated with helminthic infections. The Kurloff body is formed by the nucleolus in an exactly similar manner to other zymogen granules. Acton and Knowles confirm Ehrlich's and Kurloff's view as to the nature of these bodies, viz., that they contain *Secretin-Stoff*. The eosinophil granules are derived from the nucleolus and are of the nature of zymogen granules. The phases in development seen in these archoplasmic vesicles from the *Initial-Körper* to the formation of the spireme stage, coincide exactly with the stages described by E. R. Ross in the development of the *Lymphocytozoon cobayae;* and by Hartmann and Prowazek for *Chlamydozoa.*

22. Period before Symptoms When Saliva of an Animal Incubating Rabies is Infective.—Cruickshank and Wright found it difficult to infect rabbits and guinea-pigs either intramuscularly or subdurally with the salive of dogs or guinea-pigs in the presymptomatic stage of rabies. In one case the saliva of a dog was infective three days before the animal showed symptoms. Even when the symptoms of rabies have manifested themselves it is still difficult to demonstrate the infectivity of saliva experimentally. This suggests that the bites of rabid dogs, even under optimum conditions for infection, may not infect because the saliva is not virulent. Suspensions of the salivary glands themselves are much more certainly infective under experimental conditions than the saliva derived from them. This is more especially the case for the submaxillary gland. Negri bodies are not always demonstrable in the brains of experimental rabid animals, although they may become so after subpassage.

23. Causation of Goiter at Lawrence Military Asylum, Sanawar.—The results of McCarrison's enquiry show that goiter in Sanawar is due to the presence of living microorganisms in the water supplied to the children for drinking purposes, and that the disease can be eradicated by the provision of a chemically and bacteriologically pure water, perhaps a valuable point in the etiology of the disease. The possibility that most of the contamination in this water is derived from human fecal matter is brought out.

Journal of Laryngology, Rhinology and Otology, London

February, XXIX, No. 2, pp. 57-112

24 Peculiar Form of Hyperplasia of the Mucous Membrane of the Upper Respiratory Tract. A. L. Turner.
25 A Tumor of the Soft Palate Consisting Mainly of Salivary Gland Tissue. T. Guthrie.
26 Suspension Laryngoscopy in Children, with Particular Reference to the Treatment of Papilloma. W. Albrecht.

Archives générales de Chirurgie, Paris

January, VIII, No. 1, pp. 1-128

27 *Transfusion of Blood. L. Morel.
28 Congenital Varices on the Legs; Eleventh Case on Record. J. B. Tapie.
29 General Pathology of Joint Disease. L. Delrez.

27. **Transfusion of Blood.**—Morel gives a historical sketch of the subject and the approved technics, with summaries of the *cases in which the method has been applied in France.* The list includes 9 cases in gynecologic affections; 6 obstetric cases; 4 in which the transfusion was done after severe hemorrhage from the stomach; 3 of traumatic hemorrhage; 2 of hemorrhage from the bladder or hemorrhoids; 7 cases of pernicious anemia, and 4 cases in which blood from an immunized individual was transfused. There was 1 death in the first group and 1 in the obstetric group, but it occurred before the transfusion had been actually begun; 3 of the patients died in the hematemesis group and 1 in the 3 traumatic cases. The results were nil in 2 of the pernicious anemia cases and the other 5 patients in this group died. The case of severe hemorrhage from hemorrhoids is qualified as an actual resurrection after the transfusion, and 1 of the 2 typhoid patients recovered after transfusion of blood from immunized individuals, as also the 1 patient with uncontrollable vomiting of pregnancy, the donor a healthy pregnant woman.

Archives de Médecine des Enfants, Paris

January, XVII, No. 1, pp. 1-80

30 *Epidemic Poliomyelitis in Poland, 1911. M. de Biehler. Concluded in No. 2.
31 *Scoliosis from Malformation of Fifth Lumbar Vertebra, and Its Treatment. M. N. Wilbouchevitch.
32 Intussusception in Children. J. Comby.

February, No. 2, pp. 81-160

33 *Subcutaneous Emphysema in Children. J. Comby.
34 *Significance for Prognosis of Discoloration Left by Blister. (Nouveau signe de pronostic: la coloration des ventouses). R. Vila Ortiz.
35 *Bronchiectasia and Inherited Syphilis in Children. J. Milhit.

30. **Epidemic Poliomyelitis.**—De Biehler reviews the history of the disease and discusses its various manifestations. It does not seem to have appeared in Poland until 1911, except for a few isolated sporadic cases. During 1911, 166 cases were reported, all in May, June and July, and most of the children affected were under 3; only ten were between 5 and 10 and only five above 10. The mortality was 3.6 per cent. The leukocytes generally dropped to an average of 3,000 during the stage preceding the paralysis, but after this was installed, the leukocytes usually rose a little above normal. The children recovered apparently completely in 45.3 per cent. of the cases. The necessity for strict isolation and disinfection is insisted on, and the importance of healthy carriers. In Poland the disease seemed to spread radially from small groups of cases.

31. **Curvature of the Spine from Deformed Lumbar Vertebra.**—A number of case-histories with illustrations are given to emphasize the importance of straightening the spine by having the child wear a thicker sole on one shoe, when the trouble is due to the malformation of some vertebra. One of the patients had left cervical curvature, right dorsal and left lumbar curvature, and the radiograms showed the fifth lumbar vertebra much deformed and the fourth consequently much tilted. To correct this tilting, the spine curved at the other points above. Ordinary measures for scoliosis can do no good in such cases, but if the sole of one foot is raised an inch or so, the tilting caused by the deformity is corrected and there is no need for the correcting curves above, so that the scoliosis is cured. In one such case the child wore a sole 1 cm. high and it answered the purpose perfectly, but as the child grew, the sole was not raised to correspond and the spine gradually developed a compensating curvature again. The height of the sole required must be tentatively determined and supervised. In this case the limb was 7.5 cm. shorter than its mate, but the sole required raising only to 3.5 cm. to straighten the spine. The radiograms taken at different periods and the final complete balance of the spine, although the pelvis still slants, confirm the correctness of the views advanced. The trouble in the lumbar vertebra may be a congenital deformity or the result of inflammation. The tilting of the pelvis by raising the sole is manifestly a lesser evil than the scoliosis, especially as the malformed vertebra and the adjoining ones may settle into normal positions in time under the influence of the correcting static forces.

33. **Subcutaneous Emphysema in Children.**—Comby reports ten cases of the soft swelling of the neck, not discolored and not tender, which is liable to result from any rupture in the air passages permitting entrance of air into the subcutaneous tissues. The emphysema may extend to the face, trunk and limbs, and it may subside spontaneously in a week or two, or it may entail suffocation; four of his patients succumbed in this way. He says that it is futile to attempt to act directly on the emphysema, and that revulsion is also useless. The dyspnea and asphyxia can be combated by inhalation of oxygen; a purge and enemas may also be indicated, with sedatives and digitalis or theobromin. The extremities should be kept warm.

34. **Aspect of Blister as Aid to Prognosis.**—Vila Ortiz gives a colored plate showing the aspect of the skin at the point where there had been a blister in six different cases. The aspect differs widely according as the person is healthy or has some mild disease or a toxic form of some acute infection. When a blister on the shoulder or chest left a mottled bluish or violet space, death was always the final outcome in these cases, although there was nothing else at the time to suggest the fatal termination two or three weeks later. On the healthy and with mild disease, the surface is as if stippled with fine pinkish or bluish points. When the mottling was coarse but scattered, and the pinkish background predominated, the disease ran a protracted course, but the patients finally recovered. Defective oxygenation of the blood is probably the cause for the coarse blue mottling. Twelve instances are given to show the instructive nature of this sign. The children all had pneumonia or other disease in which the blister had been applied for revulsion.

35. **Bronchiectasia and Inherited Syphilis.**—Milhit reports the cases of three children of 10 to 13 who had pronounced signs of bronchiectasia and a positive Wassermann reaction. Under treatment of the assumed inherited syphilis all the physical signs and general symptoms of both the dilatation of the bronchi and the syphilis entirely retrogressed. The cases illustrate anew the difficulty of diagnosing bronchiectasia in children. In quite young children the suspicion of bronchiectasia should suggest syphilis at once. In older children the dilatation seems to be subordinate to a bronchial or lung affection or tuberculous process, but even here syphilis may be a contributing factor, and specific treatment may work wonders.

Bulletin de l'Académie de Médecine, Paris

February 10, LXXVIII, No. 6, pp. 201-226

36 Cocain Psychoses. C. Vallon.

Bulletins de la Société de Pédiatrie, Paris

January, XVI, No. 1, pp. 1-70

37 *Vaccine Therapy of Typhoid in Children. L. Guinon and Malarte.
38 *Diagnosis of Appendicitis in Small Children. V. Veau.
39 Intravenous Treatment of Inherited Syphilis in Very Young Children. (Cent injections par les veines jugulaires et épicraniennes chez des nourrissons et des enfants du premier age, appliquées au traitement de la syphilis héréditaire.) G. Blechmann.

37. **Vaccine Therapy of Typhoid in Children.**—Guinon and Malarte applied Vincent's vaccine in eleven cases of typhoid in children from 4 to 13 years old, including three extremely severe cases. None of the patients died, but the vaccine therapy did not prevent intestinal hemorrhage nor abscess formation nor relapses. It seemed to shorten the course in the moderately severe cases and improve conditions in the bowels, but the usual measures had to be applied the same as otherwise.

38. **Appendicitis in Children.**—The first of the six little patients whose cases are described had ascarides and symptoms suggesting to her father, a physician, recurring appendicitis,

but the abdomen was never tender or stiff at any point. The only symptoms in the second case were brief pain at the umbilicus, rapid irregular pulse, slight fever and a mere hint of stiffness of the abdominal wall at one point. In the third case a bad general condition and fits of temper were the only symptoms. In another case an ascaris 5 inches long was found in the appendix, doubled once on itself. Two of the children were only 17 months old and the bad general condition and tenderness in the iliac fossa were explained by two calculi found in the appendix in one and thirty-two threadworms in the other. All the children were completely cured by removal of the appendix. None of them had ever complained of pain in the appendix region; the older children spoke of pain at the umbilicus. Even forcible pressure on the appendix did not elicit much pain, but when this was being done the children kicked less vigorously with the right than with the left leg. The face turned suddenly red when the finger touched the appendix in two of the younger children. The wall does not stiffen in children as in adults. Veau confesses that in these six cases the physicians almost scouted the idea of appendicitis, and it was the mother's insistence alone in most of them that led to the correct interpretation of the syndrome, the mothers having lost other children or friends from appendicitis. Veau is more of an advocate of early operation for children than for adults, as it is impossible to keep children still. He waits only two hours at most and operates then unless conditions show a turn for the better.

Grèce Médicale, Athens, Greece

XV, Nos. 19-24, pp. 37-48. Last indexed Dec. 6, 1913, p. 2108

40 *Five Years of Experience with the Wassermann Test. P. Descomps.

40. The Wassermann Reaction in Syphilis.—Descomps says that this test has been applied in 418 cases at the Paris Hôtel Dieu in the last five years. Comparative tests with the various modifications of the original technic have always demonstrated the superiority of the original Wassermann-Neisser-Brück technic. He cites Gougerot's compilation of 16,458 applications of the test with only twenty-one positive reactions among the 6,957 serums derived from persons supposed to be free from all taint of syphilis. Descomps states that all the patients with progressive paralysis gave a positive reaction, and 93.6 per cent. gave a positive reaction also in the spinal fluid. In tabes the findings were positive with the serum in only 68.5 per cent. and with the spinal fluid in only 53 per cent. The reaction was also positive with the serum from three patients with sclerosis in patches and one with Friedreich's disease, confirming P. Marie's assumption of the syphilitic origin of these affections. On the other hand, a positive reaction was never obtained with either blood or spinal fluid from patients with syringomyelia, neuritis, hysteria, genuine epilepsy or brain tumors. The reaction was positive in all of the patients with aneurysm of the aorta, and yet five in this group were utterly unaware of having ever contracted syphilis. In other valvular or vascular affections the response was positive in 91 to 91.6 per cent. and in 51 per cent. of the kidney cases. The positive response in seven puzzling cases of liver disease permitted effectual treatment, as also in a large number of surgical affections which simulated tuberculous, mycotic or malignant processes, including tumors in the parotid gland and testicles, ulceration of the tongue or rectum, and stricture of the esophagus.

Lyon Chirurgical

February, XI, No. 2, pp. 113-220

41 More Frequent Use of Gastrectomy Recommended in Cancer of the Stomach. X. Delore and P. Santy.
42 *Latent Congenital Subluxation of the Hip in Adults. (Des subluxations congénitales larvées de la hanche chez l'adulte.) M. Gangolphe and L. Plisson.
43 *Gastric Crises not Caused by Tabes, and Their Surgical Treatment. R. Leriche.

42. Latent Congenital Subluxation of the Hip.—Gangolphe and Plisson give the detailed case histories and radiographs in eight cases of congenital tendency to dislocation of the hip-joint which did not manifest itself until between 25 and 45. This condition is apt to be wrongly diagnosed as coxalgia, arthritis or fracture of the neck of the femur. Correct diagnosis is difficult from the symptoms, but it may be confirmed by the Roentgen ray. The lesion offers a favorable soil for the development of arthritis and ankylosis, and the treatment should be chiefly by hygiene to prevent such complications. Fatigue must be avoided. Surgical treatment is not justified; symptomatic and functional measures strengthening the muscles and warding off inflammation of the joint are all that is needed.

43. Gastric Crises Not Caused by Tabes.—Severe gastric crises similar to those of tabes, but not accompanied by other tabetic symptoms are not infrequent. Leriche describes three such cases, two of which were caused by a callous ulcer in the posterior wall of the stomach. In the other there was a small cancer of the lesser curvature, but the deep glands were also involved and pressed on the solar plexus. Tumors of the pancreas frequently cause such crises. In all such cases the appropriate surgical treatment should be applied. There are other cases caused by celiac or mesenteric neuralgia, and in these he recommends section of the dorsal roots, from the fifth to the tenth. Root section is justified in cases in which no local lesion can be found.

Presse Médicale, Paris

February 7, XXII, No. 11, pp. 105-112

44 *Periodical Spasm of the Descending Colon in Children. V. Hutinel
45 Abortion and Artificial Sterilization at Same Time. A. Sarkissiantz.

44. Periodical Pain in the Descending Colon in Children.—Hutinel reports eight cases in which the symptoms suggested invagination of the bowel in the left side, but no tumor could be detected and there was slight or no tenderness, and the symptoms rapidly passed off without leaving a trace. In one of the cases the stools showed a little blood, but direct examination of the rectum disclosed nothing to explain it. The appendix cannot be responsible for the disturbances as they are liable to return after its removal; they are too briefly transient for an inflammatory process. The attacks recur again and again and may become complicated with appendicitis; the children are liable to develop migraine later and some of them become diabetic. Hutinel explains the trouble as a spasm of the large intestine, predominantly in the descending colon and sigmoid flexure. He describes his cases in detail to emphasize the special features of this "gastrointestinal spasmophilia." It is most common in children between 4 and 15 with an inherited neuropathic taint or family history of diabetes or gout. Most of the children whose cases are related had had colitis at some time in the past and were inclined to constipation, "biliousness" and to recurring sore throat. The descending colon can generally be palpated at various points during an attack as a hard cord or rubber tube; between these points gurgling sounds may be heard. In one case the intestinal attack followed on acetonemic vomiting, and there was mucus in the stools. The parallel tendency to spasm and excessive mucous secretion is frequent, especially in adults. The periodical character of the disturbances is the most prominent feature. Hutinel asks whether we cannot assume that there is a gradual storing up of certain poisons with a special spasm-producing action, and when the accumulation reaches a certain limit, the organism throws it off like the discharge of a Leyden jar. The analogy and connection between the periodical intestinal spasms, attacks of asthma and acetonemic vomiting are striking. Hot applications generally arrest the spasm; he follows this with mild laxatives, distrusting calomel in these cases. The next step is to reduce the irritability of the bowels, striving to harden the child in general and tone up the abdomen. Under these measures the intervals grow longer, or the child may outgrow the tendency.

Revue Mens. de Gynécologie, d'Obstétrique et de Pédiatrie, Paris

January, IX, No. 1, pp. 1-80

46 Origin of Dermoid Cysts of the Ovary. J. Termier.
47 Vaccine Therapy in Gonorrhea in Women; Nine Cases; Failed in Four. R. Henry.

Semaine Médicale, Paris

February 18, XXXIV, No. 7, pp. 73-84

48 How Valvular Lesions Develop. (Comment se constitue une lésion valvulaire du cœur.) H. Vaquez.
49 Small Amount of Blood-Stained Ascites Sign of Tight Constriction of Intestine. (L'ascite hématique dans l'iléus.) F. Lejars.

Archiv für Gynaekologie, Berlin

CII, No. 1, pp. 1-199. Last indexed February 21, p. 652

50 Extremely Young Human Ovum in Situ. G. Linzenmeier.
51 *Exophthalmic Goiter and the Genital Sphere. (Basedow und Genitale.) E. von Graff and J. Novak.
52 *Twins of Different Races. (Nachempfängnis- und Vererbungsfragen bei der Erzeugung rassedifferenter Zwillinge.) L. Nürnberger.
53 Importance of Kyphoscoliosis for Pregnancy, Delivery and the Puerperium. E. Vogt.
54 Embryologic and Anatomic Study of the Appendices of the Broad Ligament. (Das Epithel der Anhangsgebilde des Ligamentum latum.) S. E. Wichmann.
55 *The Changes in the Kidneys during Pregnancy. (Experimentelle Untersuchung über Nierenveränderungen in der Schwangerschaft.) J. and S. Bondi.
56 *The Thyroid in Connection with the Genital Apparatus. (Schilddrüse und Genitale.) E. von Graff
57 *Tardy Recurrence after Extensive Operation for Uterine Cancer. (Spätrezidiven nach der erweiterten abdominalen Operation bei Carcinoma uteri.) W. Weibel.
58 The Meiostagmin Reaction with Cancer and Pregnancy. J. B. v. Zubrzycki.
59 *Causes and Treatment of Idiopathic Uterine Hemorrhage and Leukorrhea. A. Theilhaber.
60 Premature Separation of Normally Located Placenta. B. Aschner.
61 Duplication of Organs in Genital Sphere and Consequences for Child-Bearing. (Doppelmissbildungen der weiblichen Genitalsphäre.) E. Zalewski.

51. **Exophthalmic Goiter and the Genital Sphere.**—Graff and Novak have been able to find very little on exophthalmic goiter written from the standpoint of the obstetrician and gynecologist, and they offer here a contribution based on 36 cases. Menstruation was of the normal type in only 12 of these patients; in 8 there was complete amenorrhea which had persisted up to a year in the majority and for twelve years in one woman of 47. In 8 women the menses had been much reduced; in 2 they had become excessive. Of the 36 women, 10 were virgins. Four of the women were pregnant, and in one, a iv-para of 36, the Basedow became much aggravated during the pregnancy; in another the disease seemed to have come on with the pregnancy; in another the heart disturbances became so serious that it seemed necessary to induce premature delivery. The other woman, who had pronounced status lymphaticus and stenosis of the trachea, died during operative delivery. Only one of the children seemed normally developed; one was prematurely delivered. The disturbances in the genital sphere with exophthalmic goiter are too common for them to be merely casual. The onset of the Basedow, further, is liable to coincide with puberty, pregnancy or the menopause. In one of the cases reported the first menstruation, at 18, occurred as the exophthalmic goiter first developed; in 2 cases the disease came on first during a pregnancy, and similar cases have been reported by others. It seems probable that in certain cases the genital anomaly is the first to develop, and this starts up the exophthalmic goiter by its influence on the thyroid or on the sympathetic nervous system. The opposite is also known to occur. The exophthalmic goiter may thus be primarily thyrogenous, neurogenous or ovariogenous, and treatment must be guided by this. The details of the thirty-six cases are appended.

52. **Twins of Different Races.**—In the course of his practice at Munich, Nürnberger had his attention attracted to this subject by having to deliver the twins of a white woman married to a "black man." One child was a typical Caucasian, the other a pronounced mulatto. He discusses the history of such occurrences and cites various examples on record, inclining to the belief that Mendel's laws of heredity will explain them, without the necessity of assuming superfetation.

55. **Kidney Changes in Pregnancy.**—Bondi reports extensive experimental research the results of which confirm the assumption that the kidneys are abnormally susceptible during a pregnancy to the action of toxins. This extra susceptibility does not involve the whole organ, but merely the epithelium of the tubules and canaliculi. *Under the influence of even very slight injury, which the normal kidney would not feel at all, the epithelium bcomes modified so that it permits albumin to pass, and under the influence of more serious injury actual kidney disease may develop.* The advantage of restricting the intake of salt is confirmed anew by the experimental findings reported. They also suggest that a preceding bacterial infectious process, generally tonsillitis, is an important factor in the nephritis during as well as outside of pregnancy.

56. **The Thyroid and the Genital Sphere.**—This communication from the clinic for women's diseases at Vienna in charge of Wertheim states that enlargement of the thyroid was detected in 49 per cent. of the 654 pregnant women examined; only 21 of the women had noticed the enlargement before the pregnancy. In 4 cases the children of women with goiter were born with much enlarged thyroid. Albuminuria was found in 16.6 per cent. of 241 women with enlarged thyroid, and in 22.1 per cent. of 267 without. In 33 women with eclampsia, the thyroid was enlarged in 31 per cent. No evidence was found that the thyroid is liable to become enlarged at the menopause, or that there is any connection between myoma and goiter; only 5 of the 112 women with uterine myoma examined had a goiter.

57. **Tardy Recurrence of Cancer of Uterine Cervix.**—Weibel reviews 185 cases of uterine cancer in which the growth was removed with the connected lymph-nodes, according to Wertheim's technic and the interval since has been over five years. Thirteen of the women developed cancer again after an interval between six and eight years, and one had a sarcoma on the foot nearly six years after the operation. In two cases the cancer in the breast or clitoris may be a primary new growth. In the other cases the growth was evidently a metastatic recurrence. The experiences related call for revision of the interval before we can speak of a cure; either a three-year limit must be accepted, which includes 86.5 per cent. of all the recurrences, or else a seven-year limit must be insisted on, as the above material showed recurrence in 3.4 per cent. the fourth year and 3.4 per cent. the fifth year; 2.8 per cent. recurrences the sixth, and 3.4 per cent. recurrences in the seventh year. The three-year limit is certainly enough for the general run of cancers of the uterine cervix; those occurring after this interval are tardy recurrences, and they may string along for four more years or even longer.

59. **Uterine Hemorrhage.**—Theilhaber discusses here the hemorrhage without organic basis in the uterus itself. Cureting helps in some cases probably by inciting the uterus to vigorous contractions; this puts an end to the venous stasis which has been maintaining the hemorrhages. He insists, however, that it should be followed by cauterization after an interval of two or three weeks. General treatment is usually the main thing in management of both essential uterine hemorrhages and leukorrhea. Tonics, a change to the mountains or the seashore or a course of mineral baths may be useful. Ergot often is beneficial, taken before and during the menses, keeping this up for months. Local injection of ergot or hypophysis extract may also help in arresting a hemorrhage. Systematic scarification in the period preceding the menses has also rendered good service in his and Füth's experience. He has applied cauterization about 25,000 times, during the last thirty years, and has never had a serious mishap with it. He regards acute and subacute gonorrhea as a contraindication, but has applied the caustic a number of times in chronic gonorrhea when it has kept up for a year or two. He used to apply a 30 per cent. solution of zinc chlorid, but has lately changed to a 30 per cent. solution of formaldehyd, applying it on a cotton-wound sound. The thickened, hyperemic uterus frequently becomes small and anemic, with subsidence of all tendency to hemorrhage, under the influence of the Roentgen rays.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXIX, No. 3, pp. 279-422. Last Indexed February 7, p. 496

62 *Serodiagnosis of Tuberculosis. V. Zweig and D. Gerson.
63 *Quantitative Diagnosis and Treatment of Tuberculosis. A. Juergensohn.

64 Tuberculosis in Schoolchildren and Means to Fight It. P. Vollmer.
65 *Induced Pneumothorax in Pregnant Women. (Künstlicher Pneumothorax während der Schwangerschaft.) C. Real.
66 Research on Scrofula; 821 cases. (Die "Skrofulosen" der Zürcher Heilstätte von 1885-1911.) W. Knoll.
67 *Albuminuria in the Tuberculous. F. D'Onghia.

62. **Serodiagnosis of Tuberculosis.**—Zweig and Gerson report their experience to date with the quantitative determination of the deviation of complement, using the individual complement in the serum under examination instead of the usual guinea-pig serum. The technic is described in detail and the findings in 158 tuberculous patients, in 32 with latent tuberculosis and 27 apparently free from this disease. A positive response was obtained in 72 per cent. of the first group, all tuberculous patients requiring treatment, including a number in the very earliest stages. A positive response was obtained, moreover, in some cases of scarlet fever and in others with extensive suppurative non-tuberculous processes. Two patients have died since, and the necropsy findings confirmed in every respect the findings of the tests.

63. **Quantitative Diagnosis and Guide to Tuberculin Treatment in Tuberculosis.**—Juergensohn reviews our present knowledge as to the elements of the tubercle bacillus and the way in which for each of these elements the body produces antibodies if it has enough vitality; if not, in favorable cases, the production of antibodies can be inaugurated and maintained by aid from without. This aid from without can be by nourishing food and fresh air to augment the vitality, or by injection of dead bacillus material to increase the amount of antibodies by cumulative action. The antibodies already formed act on the least resistant bacteria first; as these are destroyed their products stimulate still further antibody production which permits the next least resistant group of bacteria to be destroyed, and so on. This destruction of bacteria may become so extensive that serious harm may result from the flooding of the organism with the products of the bacteria. This is what happens when too large a dose of tuberculin is injected. All systems of tuberculin treatment which proceed by a regular sequence of doses, at given intervals of time, without regard to the individual conditions at the moment, are therefore liable to do more harm than good.

He thinks the tuberculin treatment should be begun when the antibody production begins to stand still, without waiting for it to decline, and says that the Ellermann-Erlandsen titration method permits recognition of this. (Described in THE JOURNAL, 1909, lii, 1634, and 1912, lix, 1326.)

During the first two days we get the quantitative determination of the antibodies for the toxin, and from the fifth to the eleventh day the determination of the partial antibodies for the neutral fat. By heeding these findings and comparing them with the leukocytosis, the blood-pressure, the pulse and the temperature curve, he says we get an accurate and comprehensive oversight of the individual conditions at the moment, and effectual treatment can then be applied, neither more nor less than what is needed. Holmgren's capillary adsorption blotting-paper test method is also instructive. Juergensohn has worked out a mathematical formula to express the various values, as a guide and record, and states that of 212 tuberculous patients treated on this basis, full earning capacity was regained by 26 and a complete cure was realized in 22 cases, among the 71 in the first stage; the corresponding figures were 19 and 7 in 47 cases in the second stage; 2 and 1 in 26 in the third stage; 6 and 4 in 19 with tuberculosis of the nervous system, and 10 and 6 in 40 with surgical tuberculosis. Only 10 of the total 212 showed no benefit from the treatment, and these were in the later stages of pulmonary tuberculosis; 59 were improved; 68 regained full earning capacity, and 40 were completely cured. Strict repose was enforced for the first week or ten days, while the dosage was being studied. The injections were generally made Saturday and the patient reclined for two days. Except for this they could attend to their usual business; all were outpatients except in the few far advanced cases. The intervals between injections ranged from eight to eighty-five days, the average about twenty-seven. A total of less than ten injections was given in all but 4 cases; one patient required twenty, one fourteen and two ten injections.

65. **Artificial Pneumothorax during Pregnancy.**—Real calls attention to the excellent effect of artificial pneumothorax in a woman of 22, eight months pregnant, with an extensive tuberculous process in the right lung and cavity in the upper lobe. The gas was injected very cautiously and the pulse, heart action and fetal heart sounds showed no disturbance. The lung was completely compressed by the second injection and the expectoration was very much reduced and the sputum cleared up. On account of the contracted pelvis and an ovarian tumor, cesarean section was done and the woman came out of her pregnancy much improved. Real has been able to find only one other case on record of pneumothorax induced in a pregnant woman; this was at the fourth month and the other lung was already actively involved. The woman did not complete the course and died two months after delivery. These cases confirm the theoretical assumption that an induced pneumothorax does not affect the development of the fetus and probably would not interfere with normal delivery, while Real's case shows that it does not add to the gravity of a major abdominal operation.

67. **Albuminuria in the Tuberculous.**—D'Onghia concludes from his experience in fifty cases of pulmonary tuberculosis that simple albuminuria is a sign of incipient interstitial nephritis. When the urine contains further small irregular granular bodies—"miliary bodies"—this is a sign of diapedesis of leukocytes and indicates that the nephritis has got quite a firm hold. The next step in the process is the appearance of tube-casts. On account of the low vitality of the tuberculous, the heart gives up the task of compensation at once when there is any disturbance in the circulation through the kidneys, and the phenomena of hyposystole dominate the clinical picture. The absence of the usual cardiorenal signs of nephritis explains why the kidney lesions with pulmonary tuberculosis so long escape notice.

Berliner klinische Wochenschrift

February 9, LI, No. 6, pp. 241-288

68 *Bone-Flap Operation for Paralysis of the Forearm. (Neue Knochenoperation bei Vorderarmlähmung.) O. Vulpius.
69 *Localization of Spinal-Cord Tumors. (Lokaldiagnose von Rückenmarksgeschwülsten.) G. Söderbergh.
70 Epidemic Poliomyelitis in Scattered Rural Populace. (Eine Poliomyelitisepidemie im Frühjahr 1912 in Lindaas, Norwegen.) E. Aaser.
71 Essential Elements of the Hypophysis. H. Fühner.
72 *Thrombosis of Mesenteric Vein with Latent Sclerosis of Portal Vein. F. Geppert and K. Siegfried.
73 *Radio-Activity Applied to Trypanosomes. (Experimentelle Untersuchungen an Trypanosomen über die biologische Strahlenwirkung.) L. Halberstaedter.
74 *Determination of Protective Ferments by Soap Solution and Precipitation in Diagnosis of Cancer. (Zur Sicherung der Carcinomdiagnose.) M. Piorkowski.
75 Melanotic Cells in Nasal Mucosa. (Chromatophore Zellen in der Nasenschleimhaut.) A. Proskauer.
76 Instrument for Demonstration of Compensatory Movements of the Eyes for which the Ear is Responsible. (Das Oto-Ophthalmotrop.) J. Rothfeld.
77 Present Status and New Aims of Radium and Mesothorium Therapy. P. Lazarus. Commenced in No. 5.

68. **Bone-Flap in Treatment of Paralysis of the Forearm.**—Vulpius gives an illustrated description of the simple technic with which he twisted a bone-flap around to induce synostosis between the two bones of the forearm, a little below the middle. The fixation was complete after ten weeks in a plaster dressing. The results were satisfactory, but in two later cases he took the bone-periosteum flap from the tibia. The flap is about 5 cm. long and 5 cm. thick. This corrects the pronation contracture, and he thinks it may prove useful not only for flaccid but also in some cases of spastic paralysis.

69. **Localization of Spinal-Cord Tumors.**—Practically the same article was summarized in THE JOURNAL, Nov. 8, 1913, p. 1760. Söderbergh states that there has been no tendency to recurrence of the sarcoma removed from the cauda over three years ago. The man is still in complete health and working constantly at his trade.

72. **Mesenteric Thrombosis.**—An apparently healthy cabinetmaker of 40 suddenly developed intense pain in the upper

abdomen, suggesting perforation of an ulcer or incarcerated hernia or mesenteric thrombosis, but there were no signs of ileus or stomach trouble. The necropsy three days later confirmed the diagnosis of mesenteric thrombosis and explained its origin in an old, unsuspected phlebosclerosis of the portal vein which had run an entirely latent course.

73. **Action of Radio-Active Substances.**—This communication from the radium institute of the Charité at Berlin states that trypanosomes are materially influenced by the rays from radio-active substances. They lose their infecting property but retain their motility unimpaired. This renders them peculiarly suitable for biologic experimental research work with various kinds of rays.

74. **Diagnosis of Cancer.**—Piorkowski reports that a process of saponification is a material aid in preparing specimens for biologic tests. The saponification disintegrates the tissues without injuring the antigens.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 7, XLIV, No 6, pp. 161-192

78 Early Diagnosis of Pulmonary Tuberculosis by the Non-Specialist. R. Dietschy.
79 Quantitative Silver Nitrate-Iodoform Test for Acetone in the Urine. E. and L. Sobel.

Deutsche medizinische Wochenschrift, Berlin

February 5, XL, No. 6, pp. 265-312

80 Treatment of Severe Acute Infection in Orbit. F. Schieck.
81 Transmission of Mouse Cancer by Filtered Material. (Uebertragung von Mäuserkarzinomen durch filtriertes Ausgangsmaterial.) F. Henke and Schwarz
82 Importance and Source of the So-Called Protective Ferments. (Sog. Abwehrfermente.) E. Abderhalden.
83 Specific Nature of Protective Ferments. P. Hirsch.
84 Serodiagnosis in Gynecology. Allmann.
85 Source of Error from Cotton Plug in the Wassermann Test (Eine durch Watte bedingte Fehlerquelle bei der Wa. R.) H. Langer.
86 *Fibrous Ostitis after Typhoid.* A. Welz.
87 *Secondary Colon Bacillus Infection of the Kidney Pelvis. A. Bloch.
88 Calcium Chlorid Sterilization on Small Scale of Drinking Water. Aumann and Storp.
89 *Whooping-Cough; Nature and Treatment. J. Ritter.

87. **Pyelitis.**—Bloch refers in particular to secondary colon-bacillus infection of the kidney pelvis, saying that active measures are contra-indicated in the acute stage when the trouble is secondary to severe infection of the kidney and there is no retention of urine in the kidney pelvis. Internal medication is required here. But when the pelvis or kidney or both are enlarged and tender, and pus and colon bacilli are found in the residual urine the catheter should be introduced into the kidney pelvis and left there so that the pelvis can be repeatedly rinsed out. He gives four curves to show the prompt benefit that may be realized by this method of treatment. He adds that the possibility of pyelitis must be borne in mind in all cases of gonorrheal cystitis when the urine does not clear up in spite of appropriate treatment of the bladder, even when there are no subjective symptoms on the part of the kidney. When secondary colon bacilli pyelitis is recognized and treated in time, a complete cure may be counted on in the majority of cases. With the pyelo-nephritic form, there is always the possibility that it may terminate in true chronic parenchymatous nephritis. The colon bacillus infection of the kidney pelvis generally starts in the bladder and the upward spread is favored by transient overpressure in the bladder, frequently produced by irritant lavage of the bladder, or transient obstruction of the flow of urine from some slight hindrance in the ureter, or mechanical irritation from intense hyperemia in the urogenital system.

89. **Whooping-Cough.**—Ritter says that nourishing food and out-of-door life are the main reliance in treatment of whooping-cough, with sedatives as indicated, but he protests that by out-of-door life he does not mean necessarily a change of air. This can be realized at home without the necessity for spreading the infection in another place. If a change of scene is necessary, all precautions must be taken to refrain from infecting others and for this, he says, only direct contact need be avoided as he is convinced that the contagion occurs through the sputum alone.

Münchener medizinische Wochenschrift

February 10, LXI, No. 6, pp. 289-344

90 *Bronchotetany in Adults and Its Treatment with Calcium. H. Curschmann.
91 *Thyroid Treatment of Uterine Hemorrhage. (Die Schilddrüsenbehandlung der hämorrhagischen Metropathien.) E. Sehrt.
92 *Sign of Sclerosis of the Aorta. (Anstoss der Blutsäule in den Schlüsselbeinarterien als Erkennungszeichen für die Sklerose der Brustaorta.) C. Trunecek.
93 Serum Acquires Radio-Active Properties by Exposure to Roentgen Rays. (Eigenschaften des Blutes resp. Serums nach Einwirkung der Röntgenstrahlen.) S. Wermel.
94 Modification of Abnormal Leukocyte Picture by Electricity. (Ueber raschwirkende Beeinflussung abnormer Leukozytenbilder durch ein neues Verfahren. III.) O. Veraguth and R. Seyderheim. See abstr. 83, p. 1853, vol. LXI.
95 Changes in the Blood in Whooping-Cough. (Blutuntersuchungen bei Keuchhusten.) W. Schneider.
96 Peptone Culture Medium for Anthrax Bacilli. (Zum Nachweis von Milzbrand.) H. Jaenisch.
97 Intra-Ocular Tuberculosis. W. Gilbert.
98 Retraction of Interspaces during Inspiration as Sign of Pleuritic Adhesions. (Atmungsbewegungen des Brustkorbes und der Interkostalräume bei Erkrankungen der Pleuren.) R. Richter.
99 *Radiotherapy of Cancer. (Weitere Erfahrungen mit der Mesothoriumbehandlung des Karzinoms.) A. Döderlein and E. v. Seuffert. Commenced in No. 4.

90. **Bronchotetany in Adults and Its Treatment with Calcium.**—Curschmann regards the conception of spasm of the bronchi, recently advanced (as described in The Journal, 1913, lxi, 1336), as great progress and thinks that adults are subject to it as well as children. He called attention some years ago to the connection between asthma and other symptoms suggesting disturbance in the vagus and sympathetic nervous systems; he classified the syndrome as intermittent Basedow-asthma. Further study of such cases revealed signs of tetany, especially the Chvostek sign coming on after the attack in some of the cases. Most of his patients were seen at the dispensary but one was under observation for a long time and this case is described in detail. The patient was a farmer of 32 who for the last three years had been subject to attacks of violent asthma during which various symptoms of tetany became apparent, subsiding with the attack. There was no history of spasmophilia in previous years. Under systematic calcium chlorid treatment the tendency to asthma was cured and with it all the signs of tetany. The success of calcium confirms the assumption that the same hypothetic irritation which produces the asthma acts on the other organs innervated by the vegetative system and thus on the thyroid, stimulating the latter to periodical supersecretion. Or the parathyroids may feel the influence most, in which case bronchotetany would be the main manifestation. He discusses the theoretical and clinical bases for calcium therapy. It seems to have an unmistakable action on the toxic metabolism and the resulting injury of the general health. Epinephrin, on the other hand, although a fashionable remedy for asthma, is probably contra-indicated with bronchotetany as it increases the symptoms of tetany and—at least with subcutaneous administration—may bring on an attack of asthma.

91. **Thyroid Treatment of Uterine Hemorrhage.**—Sehrt emphasizes the importance of influencing the hemorrhage without interfering with the physiological conditions. Our better knowledge of the internal secretions is opening new methods of treatment as we realize the close connection between the hypophysis, thyroid and genital organs. The connection between the thyroid and the ovaries seems to be particularly close, and the thyroid may be responsible for conditions in the ovaries which entail bleeding in the uterus. We understand this a little better since we have learned the characteristic behavior of the blood when the thyroid is functioning to excess or not enough. With hyperfunction, the blood is abnormally slow in coagulating; with deficient functioning it coagulates abnormally fast. He found in fifty-five cases of uterine hemorrhage without discoverable local cause that thirty-eight of the patients had all the signs of pronounced hypofunction of the thyroid. On this basis he gave thyroid treatment, as he describes in detail, and in every case marked benefit was apparent. Not only the hemorrhages, but the general health showed a decided change for the better; the influence was particularly striking on spastic constipation.

92. **Sign of Sclerosis of the Aorta.**—Trunecek describes, with illustrations, the bulging in the subclavian arteries, where they turn at a right angle to the axis of the aorta, when the walls of the latter have lost their elasticity. As the aorta cannot stretch, the blood entering it at each pulse wave races with undiminished force into the artery beyond and hits against the upper wall of the subclavian artery at this point. The bulging where it hits this wall can be easily felt with the finger with each pulse wave. According to the intensity and extent of the bulging, the degree of the sclerosis of the aorta can be estimated. The bulging is usually felt in the space between the scalenus muscles. This sign is easily determined and requires only a little experience while it does not fatigue the patient.

99. **Radiotherapy of Cancer.**—Döderlein and Seuffert say that it is much harder to apply radiotherapy, keeping the patients under protracted observation and examining them anew every two or three weeks, than the old way of merely deciding whether the case was operable and having the operation done once for all. With radiotherapy we have to keep oversight over the patient as death approaches, much more than used to be the case. This is compensated for, however, by the rejoicing over those cases in which in a few weeks or months we find that not only all the signs of the cancer have subsided, but the patients are restored to health and active life. The future alone can tell whether these women are actually completely cured, as seems now to be the case.

If this proves true, then operative treatment of uterine cancer will be relegated to the second place. We are already convinced, they declare, that radiotherapy can accomplish more than operative measures. One of the pressing questions now is to determine which of the pains and general phenomena are due to the radiotherapy and which must be ascribed to the cancer itself. In a number of cases the pains proved to be the work of the cancer proliferating in the depths which at first had not been felt. This is something new in the treatment of cancer. In previous palliative treatment we knew of course that the growth was responsible for any increase in the symptoms. But now any aggravation of the symptoms is promptly attributed to the effect of the radiotherapy: not only the patients but their family physicians are liable to hold the radiotherapy responsible for every aggravation of the condition. Döderlein has had several very distressing occurrences of this kind; in two of the cases necropsy showed that there must have been metastasis before the treatment was applied.

Cancer of the female genital organs is more accessible to radiotherapy and responds better than cancer elsewhere, and any shriveling or stricture formation is of less consequence here than elsewhere. Gynecologists therefore have a less difficult task than surgeons in general in respect to radiotherapy of cancer. Döderlein's experiences are reviewed in detail and various points in technic are discussed.

Therapie der Gegenwart, Berlin

February, XVI, No. 2, pp. 49-96

100 *Treatment of Rachitis. B. Salge. Commenced in No. 1.
101 Radiotherapy in General Practice. (Radiumtherapie des praktischen Arztes.) H. Schmidt.
102 *Sterility in Women. (Behandlung der weiblichen Unfruchtbarkeit.) E. Opitz. Commenced in No. 1.
103 *Digitalis in Uterine Hemorrhage. Focke.
104 *The Toxic Limit with Alypin. L. Lichtenstein.

100. **Rachitis.**—Salge comments on the diversity of views as to the nature of rachitis, some regarding the disturbances in bone growth ás the result of inflammation, others attributing them to deranged metabolism. This brings conflicting views in regard to treatment, and we are still far from a true causal treatment of rachitis. Children with rickets are generally bottle-fed, on milk, and may seem to be thriving, but the muscles are flabby and the children are pale and sometimes nervous and restless, with a tendency to spasms. Bad housing conditions, lack of light and of stimulation of the skin by fresh air seem to predispose to rachitis, and change of diet and cautious, passive muscular exercise with, possibly, massage of the abdomen and muscles may bring about a marked change for the better or complete cure. The muscle weakness and the anemia may develop before the bones show much change; there may be recurring bronchitis owing to the defective action of the chest from the weakness of the muscles and softness of the bones. Salge insists that milk should be dropped entirely and starchy foods be given, gradually adding vegetables (spinach, carrots, cauliflower, asparagus, etc.), with soft mashed potatoes, etc., and fruit, fresh and stewed. A little meat can be given to children over a year old. Eggs are less favorable, and many rachitic children are unable to eat them. Milk should be restricted to 200 or 300 c.c. at most. Large doses of calcium chlorid seem to cure the tendency to spasms as long as it is being taken. Phosphorus is also useful as an adjuvant to the dietetic measures; it acts more favorably the more pronounced the rachitic symptoms. Its tendency to induce sclerosis in bone tissue counteracts the rachitic softening of the bones. Breast-fed children seldom have rachitis in a severe form. The change to the above diet is recommended here also. It is possible, Salge remarks in conclusion, that the theory of vitamins may yet solve the problem of rachitis.

102. **Sterility in the Female.**—Opitz states that too little attention is paid to the general condition of the sterile woman. It frequently has happened in his experience that a course of general treatment was what was needed, even when the women were apparently in normal health and some anomaly in the genital apparatus seemed to explain the failure to conceive. He examines the husband and makes a general examination of the woman and treats anemia, chlorosis, etc., restricting the amount of meat and increasing the proportion of vegetables and fruit. This is supplemented by a course of arsenic which seems to have a special action on ovary and uterus functioning. In numbers of cases a course of arsenic, iron and calcium glycerophosphate has been followed by the desired effect. Catarrh of the cervix may mechanically interfere with conception. When obesity develops suddenly the ovaries are liable to be functioning defectively, and thyroid treatment may remove the cause of both, as in two cases he reports in which normal conditions were thus restored in the genital sphere. A small tumor in one ovary may hamper the functioning of both, while its removal may be followed by conception. A still more frequent cause of sterility is mechanical displacement from adhesions left from inflammatory processes in appendix or adnexa. In one case he found the tubes twice the normal length, thickened and contorted. He resected half of each tube and menstruation became normal thereafter with pregnancy the following year. He ascribes the previously very irregular menstruation to a series of tubal pregnancies with the casting off of the ovum in each without severe disturbances.

103. **Digitalis for Uterine Hemorrhage.**—Focke emphasizes that with uterine hemorrhage without an organic basis, digitalis is a powerful aid to the local measures applied. It is particularly useful in hemorrhage during a pregnancy, and in recurring menorrhagia in the young and in the elderly; in short in all cases in which the uterus is apparently sound and some disturbance in the circulation causes a tendency to transient congestion and spontaneous (essential) bleeding. He has prescribed digitalis for uterine hemorrhages in 100 cases during the last fourteen years and here analyzes fifty of them. When the uterus was diseased there was not much effect from the drug, but it proved invariably effectual in his twenty-nine cases of excessive or too frequently returning menstrual hemorrhage. In these cases he commences the digitalis a week before the anticipated menstrual period. Coffee must be dropped as this seems to counteract the action of the digitalis. Four in this group had mitral insufficiency but the others had no signs of heart trouble. The digitalis is an aid in differentiating, often rendering local examination unnecessary in girls; if the digitalis does not help at all, some local trouble may be surmised and gynecologic examination becomes indispensable.

104. **Alypin Poisoning.**—Lichtenstein refers to the sudden fatal collapse after injection of alypin in a case reported by

Proskauer and one by Ritter. Schröder and Garrasch have also reported cases of convulsions, stupor and asphyxia after its use, and Lichtenstein adds another to this group. His patient was a robust man of 35, and 100 gm. of a 1 per cent. solution of alypin was injected to block the sciatic nerve. Ten minutes later signs of acute alypin intoxication followed, as above, with cyanosis, tonic-clonic spasms, eyeballs rolled upward. the respiration arrested. The patient began to breathe again after about a minute and a half, and improved under stimulants but was unconscious for an hour.

Zentralblatt für Chirurgie, Leipsic

February 14, XLI, No. 7, pp. 273-320

105 Operative Treatment of Ulcer of the Lesser Curvature. Baum.
106 Advantages of Bridge Plaster Cast for Tuberculous Hip and Knee Processes. (Die Vorteile des Brückengipsverbandes.) F. Loeffler.
107 Extension Screw and Plaster Cast. (Modification des Gipsverbandes bei Verwendung der Distraktionsschraube nach Kaefer-Hackenbruch.) N. Kaefer.

Zentralblatt für Gynäkologie

February 14, XXXVIII, No. 7, pp. 258-296

108 Serum of Pregnant Women with Albuminuria Digests Placenta Tissue. (Das proteo- bezw. peptolytisches Vermögen des Serums bei Schwangerschaftsalbuminurie.) H. Hinselmann.
109 Pregnancy Acromegaly. R. Marek.
110 Traumatic Vaginal Cancer from Pessary; Supposed to be Third Case on Record. (Zur Aetiologie des Scheidenkrebses.) K. Edelberg.
111 Dialysis Serodiagnosis as Modified by Menstruation and Pregnancy. S. Kjaergaard.

Zentralblatt für innere Medizin, Leipsic

February 14, XXXV, No. 7, pp. 153-184

112 Serum Nitrogen that will Not Dialyze. (Gehalt des menschlichen Blutserums an adialysablem Stickstoff.) H. Pribram.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos 13-15, pp. 129-160

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121 The Blood Serum in Experimental Adrenal Disease. (Sul potere battericida ed indice opsonico del siero di sangue in alcuni stati surrenali sperimentali.) V. Cerfoglia.

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123 Papilloma and Simple Ulcer of the Bladder. G. Seri.

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129 *Transplantation of Joints. (Over transplantatie en haar beteekenis voor de hedendaagsche heelkunde.) H. Küttner.
130 *Nature and Treatment of Diabetes. A. T. Hoedemakers.

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131 *Eclampsia. K. de Snoo.
132 Cooperation of the Cerebral Hemispheres. (Over het samenwerken der groote hersenhelften.) C. T. van Valkenburg.

129. **Transplantation.**—After considering the various forms and methods of transplantation of various tissues, and discussing the results, Küttner describes his own method and success with the transplanting of an entire joint taken from a cadaver. He emphasizes the necessity for minutely careful post-mortem examination of the body and bacteriologic examination of the part which is to be transplanted, to avoid inoculating disease. Remarkable results were obtained in his two cases reported in detail.

130. **Diabetes.**—Hoedemakers explains the pathological physiology of diabetes and the aims of treatment. It should combat both the glycosuria and the appearance of acetone in the urine. The pathologic significance of the glycosuria is the accompanying loss of calories, thus depriving the body of needed nourishment. The accumulation of the acetone bodies is probably responsible for the coma and loss of energy.

131. **Eclampsia.**—There is no acceptable definition of pregnancy intoxication; even the conception of anaphylaxis is inadequate to explain all the cases of eclampsia. This is preeminently, de Snoo remarks, *die Krankheit der Theorien*, and many more new theories probably will yet be formulated in regard to it. There is at present a tendency to return to the therapeutic measure which was employed for years prior to 1870, that is, blood-letting. Since April, 1911, Zweifel has applied venesection in eighty-nine cases, withdrawing about 500 c.c. of blood, with good results. The theory of Traube-Rosenstein concerning brain-anemia led Schröder to teach, about 1870, that blood-letting had no effect. This led to expectant treatment, with administration of narcotics, chloral, chloroform, morphin, and with hot packs, baths and diaphoretics. This was the treatment between 1870 and 1890. It was accompanied by an average mortality of 30 per cent., and this high mortality led Dührssen to advocate prompt interruption of the pregnancy as the routine treatment. With this the death-rate was lowered to 15 per cent. The mortality percentage with active interference is everywhere about the same, but the mortality with expectant treatment varies considerably, and has been brought down to about 10 per cent. Zweifel combined the Stroganoff prophylactic method of treatment with venesection and thereby reduced the mortality to 5.9 per cent., thus returning to the treatment of the period prior to 1870.

Meditsinskoe Obozrienie, Moscow

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133 Albumin in the Sputum as Sign of Tuberculosis. O. N. Melikiantz.
134 Vaccine Therapy of Gonorrhea. P. Ilinsky.

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135 Spinal Meningitis of Malarial Origin; Three Cases. I. N. Bistrenin.
136 Sunlight and Open-Air Treatment of Children; 1,120 Cases. L. Finkelstein.
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138 Kala-Azar in Young Child. (Leishmaniosis u rebenka 1 g. 2 m.) A. K. Morozoff.
139 Mongolism. T. N. Tchebotarevska.
140 Purpura. A. Artamonoff. Concluded in No. 10.

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141 Importance of Individual Isolation in Combating Hospital Infections. D. A. Sokoloff.
142 Albuminuria in Children. M. L. Abelman.

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January 29, LXXVI, No. 5, pp. 191-228

143 Pessary Treatment of Genital Prolapse. I. P. Hartmann.

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THE HISTOGENESIS OF MULTIPLE BASOCELLULAR CARCINOMA*

RICHARD L. SUTTON, M.D.
KANSAS CITY, MO.

A discussion of the autogenetic theories of the etiology of cancer invariably leads one ultimately to the hypotheses originally formulated by Thiersch[1] and by Cohnheim.[2] Hansemann,[3] Lubarsch,[4] Krompecher,[5] Borrmann[6] and a number of others follow Thiersch's lead, and believe that a disturbance of the normal restraining influence of one tissue on another is in a large measure responsible for the lawless proliferation of the cancer cell, while Ribbert[7] is probably the foremost present advocate of the embryonal inclusion theory.

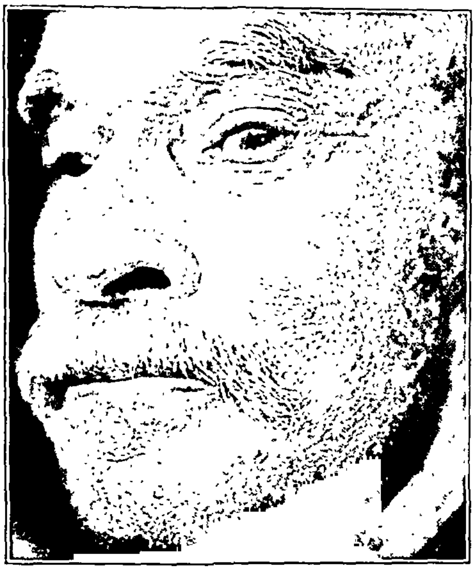

Fig. 1.—Patient 2. Note distribution of lesions on nose and chin.

Janeway[8] has recently made an interesting contribution to the subject. His conclusions may be briefly summarized as follows: The essential change applicable to all cases in the transition of somatic cells into cancer cells is primarily of the nature of a degeneration, which, in one class of cases, is dependent on the existence of a previously isolated group of cells, in another class on associated lesions in the connective tissue stroma, particularly a subepithelial capillary congestion which is of such a nature as to suggest a diminution of tissue tension and the setting free of regenerative forces in the adjacent epithelial elements, and in still a third class on metaplastic activities for which the epithelial cells alone are responsible. In one instance Janeway found a prickle-cell carcinoma which he believed had resulted from a basal-cell metastasis.

Loeb and Sweek[9] have investigated the histopathology of a number of lesions excised from a case of multiple carcinoma of the skin in a man, aged 33. The patient had received a number of Roentgen-ray treatments for the lesion which first appeared. The writers endeavored to ascertain: 1. Whether or not the tumors were multiple primary lesions or skin metastases which had originated from one primary lesion. 2. If the tumors were multiple primary lesions, did they spring directly from the basal layer of the epidermis or other normal cutaneous structure, or from cell nests in the corium, the epidermal involvement being purely secondary? 3. In case of a direct downgrowth of the surface epithelium, did any perceptible change, such as round-cell infiltration, connective-tissue cell increase, as claimed by Ribbert, or vascular dilatation or other alteration, as suggested by Spude[10] and by Janeway, precede the epithelial proliferation?

They conclude that the formation of multiple carcinoma of the skin depends on a primary increase in activity of certain parts of the epidermis, and that this proliferative tendency is independent of attractive influences of blood-vessels and of changes in the corium. They consider it hypothetically possible that the pathologic changes found in the skin, especially in the derma, may entail an abnormal metabolism of the skin with resulting production of substances which exert a stimulating effect on the proliferative energy of the epithelium at various places, thus rendering certain areas in the epidermis exceedingly sensitive to the action of even slight external stimuli, such as mechanical pressure, sunlight, the Roentgen rays and alterations in temperature. The inability of the affected epithelium to undergo the normal metamorphosis of surface epithelium into keratohyalin and keratin, they believe due mainly to its relatively slight infiltrative power and proliferative energy.

During the past eighteen months I have had opportunity to study five typical cases of multiple carcinoma basocellulare.

CASE 1.—Mrs. L. T., housewife, aged 23, was referred by Dr. Walter S. Sutton of this city. The lesions, which were linseed- to wheat-grain-sized, round or flat-topped, flesh-colored tumors, numbered more than fifty, and had been present for from two to eight years. Only one had ulcerated.[11]

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* From the Department of Dermatology, University of Kansas, School of Medicine.

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Case 2.—J. R. V., widower, retired contractor, aged 67, was referred by Dr. N. E. Lake of this city. The family cutaneous history was negative. The primary growth had appeared on the left side of the nose about ten years prior to the date of examination, and was a typical epithelioma of the rodent ulcer type. Early in 1913 this lesion was destroyed by means of the Roentgen rays and carbon dioxid snow. In July, 1913, the patient reported for further treatment. On examination it was found that three new lesions had developed, one on the left ala, and two on the left side of the chin (Fig. 1). The site of the original lesion was a smooth scar. The three new growths were firm, pinkish, oval nodules, averaging 0.5 cm. in diameter. They gave rise to no subjective symptoms.

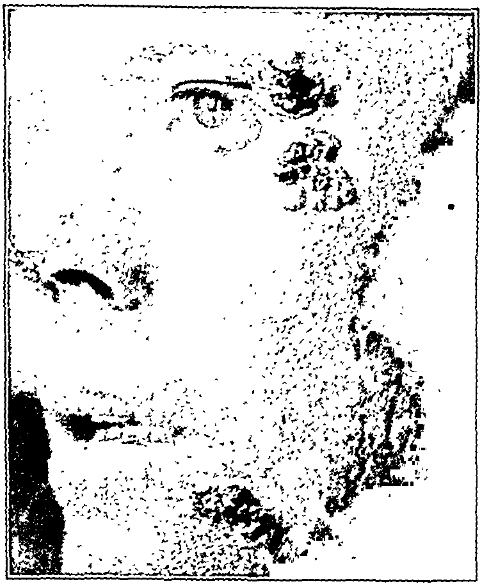


Fig. 2.—Patient 3. Character and distribution of lesions is well shown.

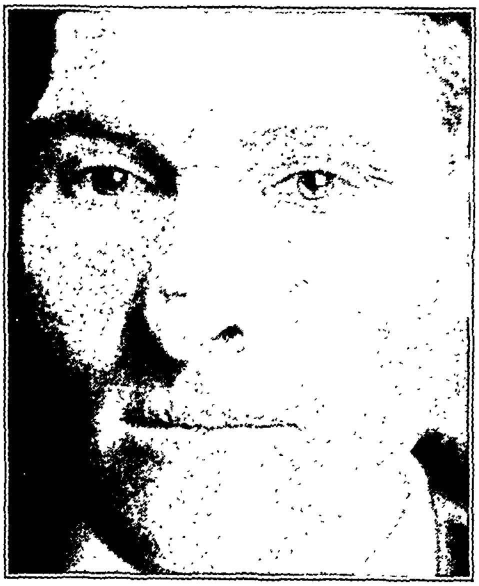


Fig. 3.—Patient 4. Distribution and character of lesions on nose, cheek and forehead may be noted.

Case 3.—A. F., farmer, married, aged 29, was examined and the biopsies performed through the courtesy of Dr. Frank J. Hall, of this city. The disease had first appeared on the tip of the nose, eleven years before, the initial lesion being a small, pale papule which gradually increased in size during the next two years. At the end of that time it broke down in the center, and a sluggish, stellate ulcer, having a granulating base and a slightly elevated, oval, waxy border, resulted. Shortly afterward a second tumor appeared, and then a third, both near the outer canthus of the left eye. These followed the same clinical course as the first. During the next year, two more lesions developed, both being located on the chin. Following these no new tumors appeared. The ulcers gradually increased in size, but always remained superficial (Fig. 2). There was no lymph-node involvement.

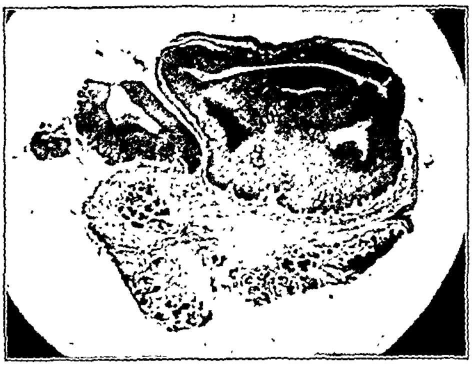
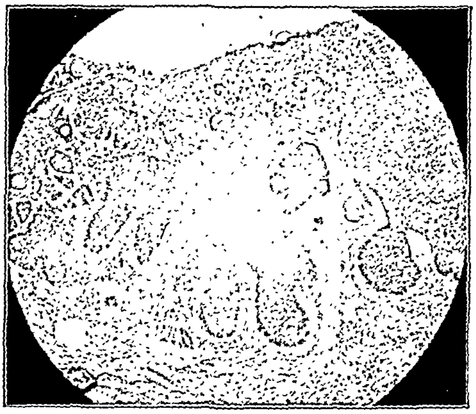


Fig. 4.—Microscopic section of specimen from Case 3. Note dense, almost acellular character of derma. Looped-off masses of connective tissue in the center of cancerous growths have degenerated, giving rise to cysts.

Case 4.—R. A., married, farmer, aged 32, was referred by Dr. John Kennedy of Blue Mound, Kan. The patient's maternal grandmother died of cancer of the face, and his mother had a rough, harsh skin; otherwise the cutaneous history of the family was negative. The disease had begun on the tip of the nose, two years before, as a small, hard, shiny, painless nodule. Medical advice was not sought, and the growth gradually increased in size, finally breaking down to form an irregularly outlined, shallow, roll-edged ulcer. Fourteen months later a second lesion developed on the flush area of the left cheek. The patient was slender but muscular. The skin on parts other than the face and hands was normal. In these regions the integument was rough and scaly, with a tendency to the formation of keratoses. None of these lesions had become malignant, however, the only cancerous growths found being three small, pearly nodules on the face, and the ulcer on the nose. The ulcer had healed in the center, but there were signs of active proliferation at the margin. The lesion beneath the left eye consisted of two partially coalescent, wheat-grain-sized tumors. In the center of the forehead was a third tumor, and near the right nasolabial fold a fourth (Fig. 3).

Case 5.—R. B., widower, capitalist, aged 73, was referred by Dr. W. H. Gibbons of Clinton, Mo., and Dr. J. Archie Robertson of this city. The cutaneous history of the family was negative. The patient had spent much time out of doors, and the integument covering his face and hands was of the type described by Unna[12] as "sailor's skin." The lesion from which relief was sought had existed for about three years, and was located on the right side of the nose. Clinically it presented all of the characteristics of a rodent ulcer. Just in front of the right ear was a second tumor, a small prickle-cell carcinoma which had developed on the base of a long-standing seborrheic keratosis. Early in April, 1913, each of



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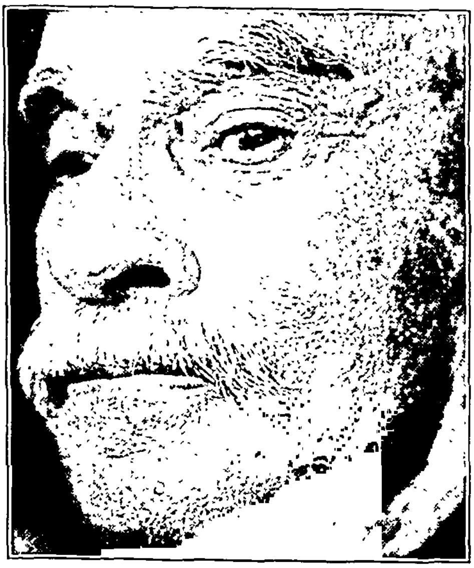
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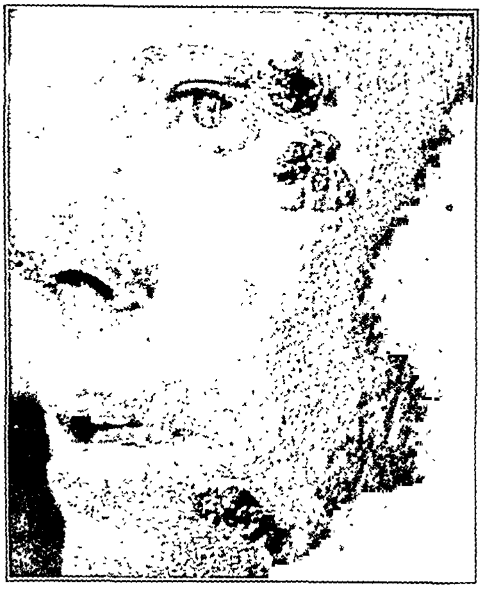

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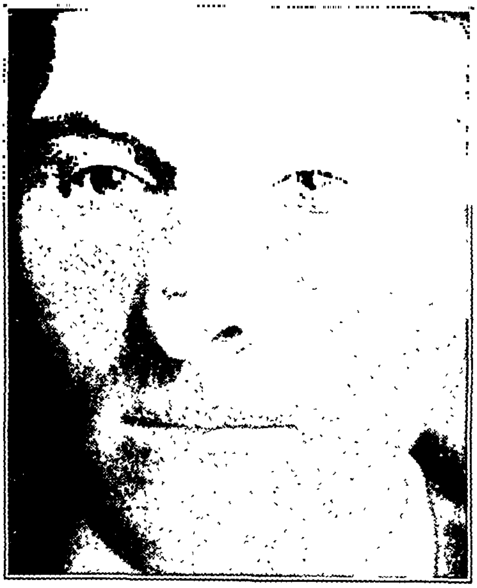

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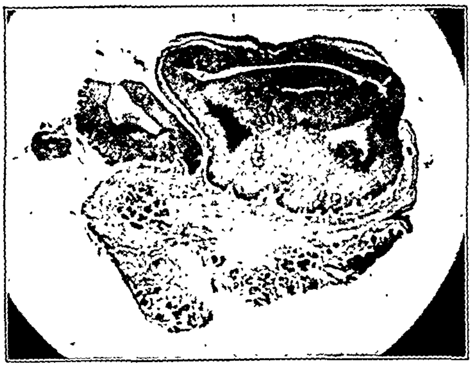

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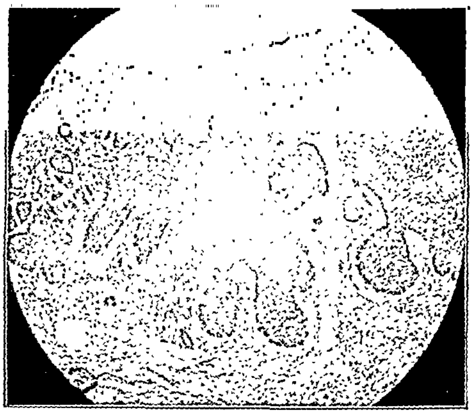

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these growths was given an erythema dose of Roentgen rays, and then deeply and thoroughly frozen with carbon dioxid snow. The patient spent the summer in Colorado and reported for examination early in September. At that time the lesion on the cheek had disappeared, and only a minute portion of the one on the nose remained. But at various points on the face new tumors had developed, one on the forehead, one near the base of the left ala, and one just beneath the right eye. All were of about the same size, 2 mm. in diameter and 1 mm. in height, of firm consistency, and gave rise to no subjective symptoms whatever.

For histologic study, three tumors were excised from Patient 1, two from Patient 2, two from Patient 3, two from Patient 4 and three from Patient 5. The material was fixed in formaldehyd solution, mounted in paraffin and sectioned serially at various angles to the surface.

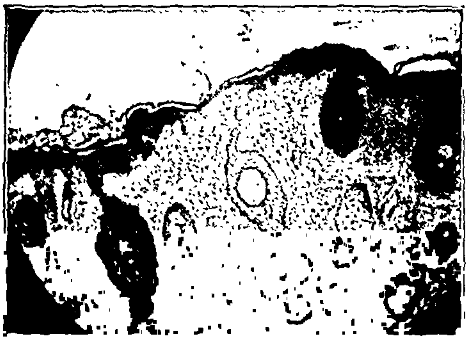
Fig. 6.—Cysts in the follicles near the margin of a lesion in Case 5. Colloid degeneration of connective tissue.

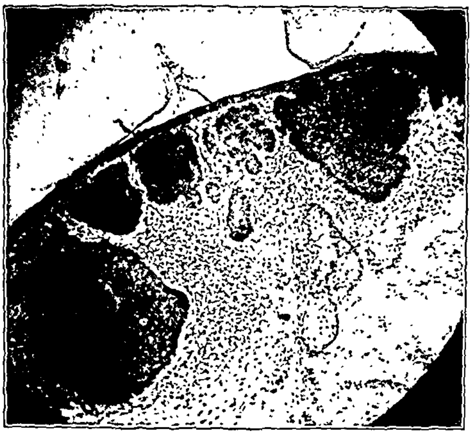
Fig. 7.—Microscopic section of specimen from Case 1, showing shape and character of epithelial tumors, with primary cyst.

Although the changes observed in the specimens from the five cases were very similar, they differed much in degree. The papillae were flattened in all, a result of long-continued pressure from below, and the unaffected neighboring epidermis was thinned and atrophied. Mitotic figures in the prickle cells were rare. Perinuclear halos were comparatively common. In specimens taken in Cases 1, 2, 4 and 5, rarefied areas in the connective tissue were frequent, but in the specimen in Case 3 the stroma was so condensed at some points as to appear almost homogeneous (Fig. 4).

The development of the cancer masses could be studied best in the early lesions from the first patient. The process apparently began in the basal layer of an otherwise normal interpapillary body. The affected elements could be readily differentiated from the normal by a slightly decreased affinity for the basic dyes. As Loeb and Sweek have suggested, the character of the downgrowth is probably governed more by the resistance of the underlying structures than by any other one factor. If the penetrative action were a result of perivascular or intravascular attraction, it is probable that we should always find long, slender, ray-like projections of transformed epithelium instead of the mushroom-, acorn- or artichoke-shaped masses that characterize tumors of this type. The course and progress of the cancerous projections are largely dependent on the comparative density of the tissues involved.

In Cases 2 and 5, both in elderly men, the loosely interwoven character of the connective-tissue bundles evidently offered but little resistance to the downward growth of the tumor; consequently we find long, sinuous strands of cancer cells extending far into the corium (Fig. 5). Probably the coalescence of these strands at various points is largely a matter of chance. If the paths of lowered resistance cross, coalescence takes place, or if the outer zone of pressure is greater than the inner, the ever-increasing size of the masses finally forces them together, a core or island of connective tissue frequently being included (Fig. 6).

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Judging from the contour of the sections, the cysts formed in Case 1 were of the primary type, due to the breaking down of cancer cells, while those in Case 3 were of the secondary type, the contents probably being liquefied islands of connective tissue.

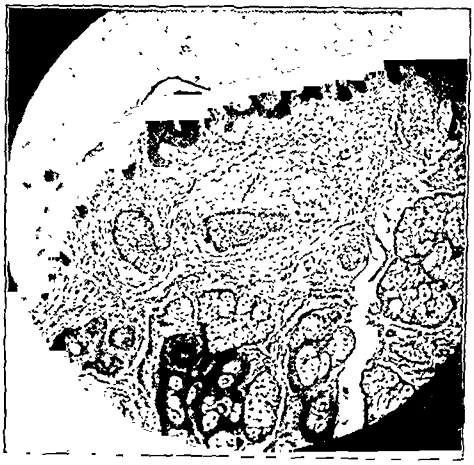
Fig. 8.—Microscopic section of specimen from Case 5. Section from the margin of the growth beneath the right eye. Note almost complete absence of cellular infiltration in vicinity of epithelial masses.

The sections taken in Cases 2 and 5 presented the best opportunity for investigating the theories of Spude and of Janeway. Of the many sections examined, in not a single instance could a connection between the development or progression of the cancerous processes and the vascular system be traced. In fact, when one considers the character of the lesions in all of the cases here reported, the essential changes in the connective *tissue were extraordinarily trivial, and invariably secondary.*

CONCLUSIONS

The theories of Thiersch and of Cohnheim are not tenable in all cases of cancer.

In basocellular carcinoma the tumors spring directly from the basal layer of the rete, and are independent of proliferative changes in the corium. It is improbable that either the blood-vessels or substances within the blood-vessels exert any influence on the course or character of the lesions.

An important, if not absolutely essential, factor in the etiology of both basocellular and prickle-cell cancer is a peculiar quality of the skin, a quality which may be acquired, but is frequently congenital and occasionally inherited, and which is characterized by harshness and dryness, with more or less evidence of long-standing dry seborrhea.[13] Judging from the regions commonly involved, exposure to sunlight and to atmospheric changes also plays an important part in the preparatory degenerative process.

The long-continued action of the Roentgen rays may give rise to cutaneous changes which predispose to cancerous involvement, but this predisposition is limited to the area exposed, and would not account for an increased susceptibility of the skin on other parts of the body.

The question of a possible relationship between the growths in multiple basocellular carcinoma is an exceedingly interesting one. It may be that in some instances, when the primary lesion is untreated or insufficiently treated, as in Cases 2, 4 and 5, a shower of infectious particles is thrown off ultimately to lodge at various points in the body. The subsequent behavior of these particles is entirely dependent on their new environment, and the basal layer of a properly prepared epidermis may serve for them the same purpose that certain areas on the heart valves occasionally serve the *Streptococcus viridans.*

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RADIOLOGIC SIGNS OF DUODENAL ULCER

WITH SPECIAL REFERENCE TO GASTRIC HYPERPERISTALSIS *

R. D. CARMAN, M.D.
ROCHESTER, MINN.

While increased gastric peristalsis has been commonly listed among the radiologic signs of duodenal ulcer, it has not received the emphasis which it deserves as an independent diagnostic indication, and no serious effort has been made to estimate its value relative to other signs, and thus to show its specific importance. More often it has been casually remarked as a mere feature of hypermotility. Foreign radiographers have, in a *general way, remarked its frequency, but without going* into large figures or refined details. In this country attention has been almost wholly directed to other signs. My own experience with this sign has been so strongly confirmatory of its high importance that I venture to present herewith brief statistics of 198 cases of duodenal ulcer operatively confirmed, showing the percentage in which hyperperistalsis was noted.

The establishment in recent years of duodenal ulcer as an anatomopathologic entity and the frequency of its incidence have led to rapidly increasing knowledge of this condition. In the past, ulcer of the duodenum has no doubt been confounded with ulcer at the pyloric end of the stomach, partly because of the assumption that any ulcer found in the vicinity of the pylorus must necessarily be gastric, and partly because of the difficulty of determining the exact site of the pylorus. In 1907, W. J. Mayo[1] called attention to the pyloric vein as a landmark corresponding accurately to the pyloric sphincter. More careful determination of the pyloric site has resulted in finding that the ratio of frequency between duodenal and gastric ulcer is far greater than has been supposed, being now variously stated as three and even four to one.

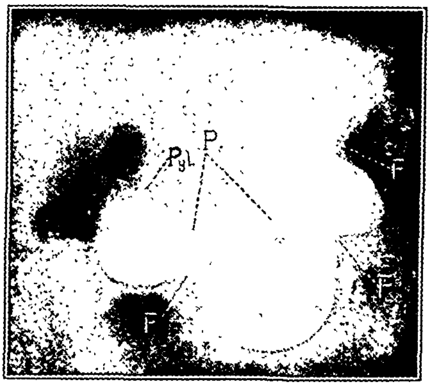

Fig. 1.—The white area is the bismuth-filled stomach. The indentations, marked *P*, are peristaltic waves, the depth of which shows the vigor of contraction. In this case, there was marked obstruction as shown by a residue of three-fourths of the bismuth meal after six hours. The extreme exaggeration of the peristalsis is due in part to this obstruction. At operation, a large irregular ulcer of the duodenum was found. Lumen of duodenum reduced to size of a lead-pencil at the point of obstruction.

Notwithstanding the constantly growing mass of convincing statistics, many clinicians and especially a few gastro-enterologists of this country and continental Europe are on record as claiming that duodenal ulcer is these growths was given an erythema dose of Roentgen rays, and then deeply and thoroughly frozen with carbon dioxid snow. The patient spent the summer in Colorado and reported for examination early in September. At that time the lesion on the cheek had disappeared, and only a minute portion of the one on the nose remained. But at various points on the face new tumors had developed, one on the forehead, one near the base of the left ala, and one just beneath the right eye. All were of about the same size, 2 mm. in diameter and 1 mm. in height, of firm consistency, and gave rise to no subjective symptoms whatever.

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* From the Mayo Clinic, Rochester, Minn.

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For histologic study, three tumors were excised from Patient 1, two from Patient 2, two from Patient 3, two from Patient 4 and three from Patient 5. The material was fixed in formaldehyd solution, mounted in paraffin and sectioned serially at various angles to the surface.

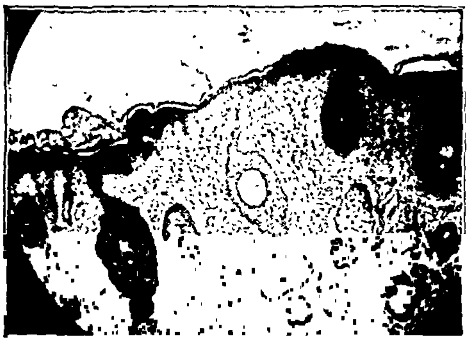
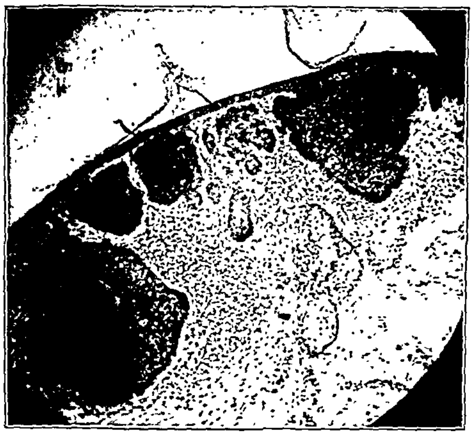


Fig. 6.—Cysts in the follicles near the margin of a lesion in Case 5. Colloid degeneration of connective tissue.



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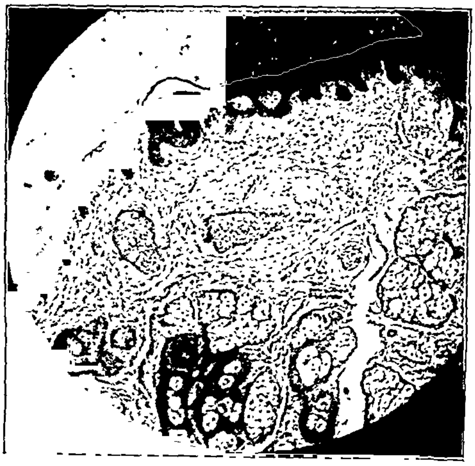

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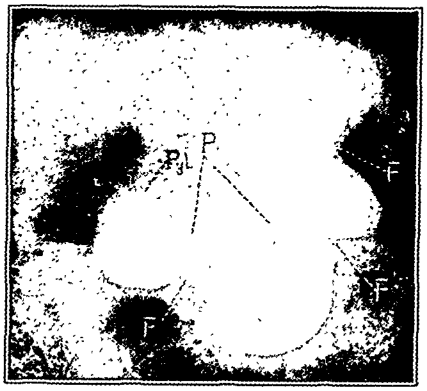

Fig. 1.—The white area is the bismuth-filled stomach. The indentations, marked *P*, are peristaltic waves, the depth of which shows the vigor of contraction. In this case, there was marked obstruction as shown by a residue of three-fourths of the bismuth meal after six hours. The extreme exaggeration of the peristalsis is due in part to this obstruction. At operation, a large irregular ulcer of the duodenum was found. Lumen of duodenum reduced to size of a lead-pencil at the point of obstruction.

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At present the diagnosis of duodenal ulcer depends chiefly on the anamnesis. Conceding that the history is diagnostic with a relatively small percentage of exceptions, the tendency is to supplement this with physical methods, in which error due to the personal equations of the observer and patient can be more or less eliminated. Of these adjuncts the Roentgen ray is the more important.

RADIOLOGIC SIGNS

The roentgenologic indications of duodenal ulcer, which have been frequently catalogued by various observers during the past two years may be divided into major and minor signs. The major signs are:

1. Gastric hyperperistalsis.
2. A residue in the stomach (sometimes in the duodenum) after six hours, if there be obstruction from scar contraction.
3. A diverticulum of perforating ulcer.

The minor signs include:

1. Gastric hypermotility with early free opening of the pylorus and speedy clearance of the stomach.
2. Gastric hypertonus.
3. Irregularities in the outline of the cap or bulb, or of the duodenum.
4. Lagging of bismuth in the duodenum.
5. Pressure-tender point over the duodenum.
6. Spasms of the stomach such as hourglass or slowly traveling incisura.

The technic by which these signs may be elicited is varied. One of the most satisfactory is the double meal method. Our present routine is as follows:

1. Purgation with castor oil, given the evening prior to examination.
2. Two ounces of chemically pure barium sulphate in a portion of breakfast cereal given to the patient the next morning.
3. Fluoroscopic-screen examination six hours later, during which the patient is first given 2 ounces of bismuth subcarbonate in 6 ounces of water, then 2 ounces of bismuth subcarbonate in 16 ounces of potato-starch pap.
4. Plates made at once after screen examination, and subsequently at intervals if desired, in either the prone or standing position, preferably the latter.

HYPERPERISTALSIS

Gastric hyperperistalsis has long been included among the Roentgen-ray indications of duodenal ulcer, but has usually been mentioned as incident to hypermotility with early clearance of the stomach, which latter sign has been given greater prominence. While increased peristaltic action may sometimes promote an early evacuation of the stomach, there is no fixed relation between the two.

Whenever the combined screen and plate method of examination is used, peristaltic exaggeration in duodenal ulcer is readily discoverable, occurs in a large proportion of cases, and has a high diagnostic value regardless of the time of gastric clearance.

The intensity of peristaltic vigor as we have noted it in this condition, using the technic previously described, varies from a slight exaggeration of wave-depth to an almost tumultuous energy of contraction. So extreme is the latter in the obstructive cases that the stomach is nearly segmented by the opposed waves, and resembles a row of balls. The peristaltic contractions on the lesser curvature participate in the tempest. Normally traversing only a small portion of the lesser curvature and deepest at their termination, they now seem to cover a wider range and are deep throughout. This symmetry and correspondence of the contractions on both curvatures is a distinctive feature. The waves are increased not only in depth, but also to some extent in frequency, so that three or four pairs may be seen in progress at once, whereas normally, using the mediums mentioned, only one or two very superficial pairs are seen.

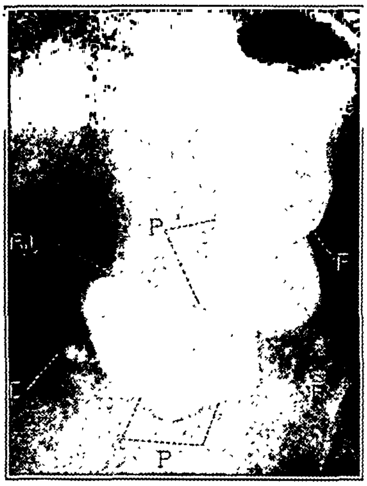


Fig. 2.—Deep peristaltic waves, indicated by *P; D* marks bismuth in duodenum. *Pyl.*, pylorus. One-half the bismuth meal was retained in the stomach after six hours. Operation showed obstructing ulcer of the duodenum.

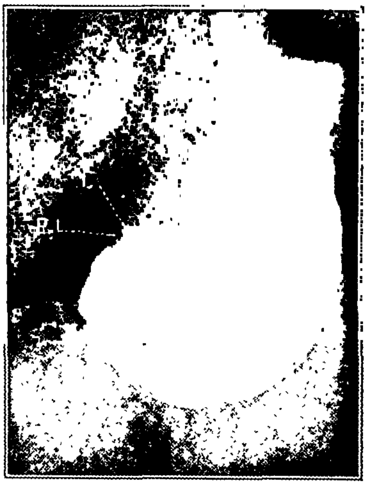


Fig. 3.—Same case as in Figure 2. Roentgenogram made immediately after that shown in Figure 2. *D*, duodenum; *Pyl.*, pylorus. Note absence of peristaltic indentations. This case illustrates the intermittency of the peristalsis.

This exaggeration of gastric peristalsis does not seem to be related to hyperacidity, because it has been noted in many of the cases of ulcer with moderate or low acidity. On the other hand, cases of gastric ulcer and appendicitis (the latter especially) with high acidity, have not shown this phenomenon. Neither does it appear to be merely compensatory to obstruction from stenosis of the duodenum, since we have seen it repeatedly where obstruction did not exist in sufficient degree to produce a six-hour residue, or to be evident at operation.

It has been my observation that stenotic lesions on the gastric side of the pylorus are rarely accompanied by gastric hyperperistalsis. Even if the peristalsis be greater than normal it is not likely to be bilateral, but will show its activity chiefly on the greater curvature. Here one is more likely also to see antiperistalsis, as I have in several cases. I have never seen antiperistalsis in duodenal irritation, even with obstruction.

The [illegible]sis which may be evoked by massage [illegible] differs from the hyperperistalsis of duodenal ulcer in the fact that the former subsides very quickly after manipulation ceases. The hyperperistalsis of duodenal ulcer requires no external stimulation to induce it. During and immediately after the ingestion of the bismuth water, peristalsis often seems rather marked, but this soon subsides. After filling the stomach with the bismuth pap, on the contrary, the institution of peristalsis is quite commonly delayed for some minutes, reaching its maximum vigor still later. The hyperperistalsis of duodenal ulcer is quite commonly of an intermittent character. It may be noted on the screen but not seen on the plate, or vice versa. Hence observation should be prolonged until this sign has had time to appear.

The degree of peristaltic vigor is apparently influenced by the character of the opaque meal. The commercial condensed milks, which contain butter fat, markedly depress peristalsis. Fermented whole milk, buttermilk and potato-starch pap are admirable mediums and do not adversely affect peristaltic action. Bismuth oxychlorid is believed to produce more vigorous action than does the subcarbonate. This is also true of barium sulphate. It has also been observed that in plates made with the patient prone the peristaltic vigor is more pronounced than in plates made of the same patient when standing. For these reasons one should have a uniform technic, so that comparisons may be on the same basis.

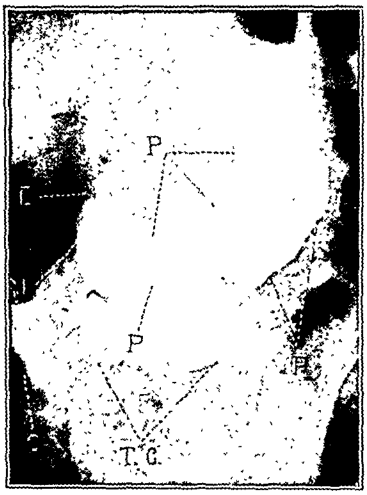


Fig. 4.—*Pyl.*, pylorus. *D*, duodenum. *P*, peristaltic waves. *C*, cecum. *T. C*, transverse colon. Vigorous peristalsis was more marked on the screen than on the plate. No obstruction. Operation showed semiperforating duodenal ulcer two inches below pylorus.

Exaggerated peristalsis above an irritative lesion of the digestive tube has been often observed radiologically and produced experimentally. In duodenal ulcer, duodenal irritation must exist as a constant or nearly constant factor. Why, then, is hyperperistalsis not seen constantly? Is its absence in some cases due to psychic influences such as fright or disgust for the bismuth meal? Is it sometimes delayed in appearance and thus overlooked in a brief examination? Is it because of peculiarities in the distribution of the nerve-supply? Does the situation of the ulcer play a part? All these are problems worthy of investigation.

SIX-HOUR RESIDUE

Of all the radiologic signs of lesions of the digestive tract the presence after six hours of a distinct residue from the barium or bismuth meal is perhaps the most important. The radiologist feels assured that almost without exception such a residue signifies an organic lesion, whether or not all his diagnostic deductions be confirmed. Theoretically, a residue may remain in simple atony and we have had one case (no operation) in which this was believed to be true; but of our cases with residue which came to operation every one was found to have some condition requiring surgical intervention.

A residue in the stomach from the barium or bismuth meal, six hours after its ingestion, occurs in a large proportion of cases of duodenal ulcer. This is often loosely spoken of as being due to pyloric obstruction, whereas the obstruction is actually in the duodenum and is produced by ulcer—scar contraction. Occasionally there will be found not only a six-hour residue in the stomach, but also a six-hour residue in the duodenum above the stenosis, thus enhancing its diagnostic value. A six-hour residue may, however, also be found in the stomach as a result of gastric ulcer or carcinoma, or thickening of the pyloric ring. A six-hour residue in the duodenum may result from bands of adhesions, or from the pylorospasm incident to gall-bladder disease.

DIVERTICULUM

The diverticulum of perforating duodenal ulcer is rather decisively diagnostic when found, but its rarity is shown by the fact that in the 198 cases herein reported only two showed this phenomenon, both of which were diagnosed radiologically.

HYPERMOTILITY WITH EARLY CLEARANCE OF THE STOMACH

At the screen examination, the bismuth water, immediately after being swallowed, is often seen to flow freely and spontaneously into the duodenum, sometimes visualizing the latter throughout. When the flow is not spontaneous, slight pressure on the stomach, or, as I have occasionally noted, pressure on the region of the appendix, may induce it. This relaxation of the pylorus is in such marked contrast to the resistance which it ordinarily offers to immediate evacuation of the stomach, and occurs so frequently in duodenal ulcer, that numerous theories have been advanced as to the mechanism of its production. Unfortunately, this sign is by no means pathognomonic of duodenal ulcer; it is often seen in association with lesions of the gall-bladder, chronic appendicitis, dilated or lax duodeni, neurasthenia, and other conditions, including carcinoma of the stomach. The flow through the gaping carcinomatous pylorus is usually so voluminous and continuous, however, that the experienced observer will rarely confound it with that noted in duodenal ulcer.

A natural sequence of this uninhibited flow is early evacuation of the stomach, and where successive interval examinations are made the stomach will often be found empty within half or less of the usual time. Some of our cases in which duodenal ulcer was suspected because of the rapid emptying of the stomach were found to be perfectly normal at operation.

HYPERTONUS

Various degrees of gastric tone may occur in association with duodenal ulcer. With long-continued duodenal obstruction the stomach may become hypotonic or even atonic, through broken compensation. Such instances, however, are in the minority. More often an orthotonic or hypertonic stomach is found, and we have seen the latter so frequently that we have come to regard it as quite suggestive of duodenal ulcer, especially if the stomach be of the fish-hook form, and otherwise normal.

A hypertonic stomach alone is, of course, not necessarily diagnostic, but in general it may be stated that in duodenal ulcer the tendency is toward hypertonicity.

a lesion which rarely occurs. Their inability to recognize its frequency is probably due, as W. J. Mayo states, to the presence of the abdominal wall.

Speaking from a radiologic point of view, I might say that during the last year only have I come to realize the frequency of this condition through following cases to operation and looking into the abdominal cavity with the surgeon. I would certainly recommend this procedure to those who are skeptical, because a large number of the patients treated for "chronic dyspepsia" have duodenal ulcer.

At present the diagnosis of duodenal ulcer depends chiefly on the anamnesis. Conceding that the history is diagnostic with a relatively small percentage of exceptions, the tendency is to supplement this with physical methods, in which error due to the personal equations of the observer and patient can be more or less eliminated. Of these adjuncts the Roentgen ray is the more important.

RADIOLOGIC SIGNS

The roentgenologic indications of duodenal ulcer, which have been frequently catalogued by various observers during the past two years may be divided into major and minor signs. The major signs are:

1. Gastric hyperperistalsis.
2. A residue in the stomach (sometimes in the duodenum) after six hours, if there be obstruction from scar contraction.
3. A diverticulum of perforating ulcer.

The minor signs include:

1. Gastric hypermotility with early free opening of the pylorus and speedy clearance of the stomach.
2. Gastric hypertonus.
3. Irregularities in the outline of the cap or bulb, or of the duodenum.
4. Lagging of bismuth in the duodenum.
5. Pressure-tender point over the duodenum.
6. Spasms of the stomach such as hourglass or slowly traveling incisura.

The technic by which these signs may be elicited is varied. One of the most satisfactory is the double meal method. Our present routine is as follows:

1. Purgation with castor oil, given the evening prior to examination.
2. Two ounces of chemically pure barium sulphate in a portion of breakfast cereal given to the patient the next morning.
3. Fluoroscopic-screen examination six hours later, during which the patient is first given 2 ounces of bismuth subcarbonate in 6 ounces of water, then 2 ounces of bismuth subcarbonate in 16 ounces of potato-starch pap.
4. Plates made at once after screen examination, and subsequently at intervals if desired, in either the prone or standing position, preferably the latter.

HYPERPERISTALSIS

Gastric hyperperistalsis has long been included among the Roentgen-ray indications of duodenal ulcer, but has usually been mentioned as incident to hypermotility with early clearance of the stomach, which latter sign has been given greater prominence. While increased peristaltic action may sometimes promote an early evacuation of the stomach, there is no fixed relation between the two.

Whenever the combined screen and plate method of examination is used, peristaltic exaggeration in duodenal ulcer is readily discoverable, occurs in a large proportion of cases, and has a high diagnostic value regardless of the time of gastric clearance.

The intensity of peristaltic vigor as we have noted it in this condition, using the technic previously described, varies from a slight exaggeration of wave-depth to an almost tumultuous energy of contraction. So extreme is the latter in the obstructive cases that the stomach is nearly segmented by the opposed waves, and resembles a row of balls. The peristaltic contractions on the lesser curvature participate in the tempest. Normally traversing only a small portion of the lesser curvature and deepest at their termination, they now seem to cover a wider range and are deep throughout. This symmetry and correspondence of the contractions on both curvatures is a distinctive feature. The waves are increased not only in depth, but also to some extent in frequency, so that three or four pairs may be seen in progress at once, whereas normally, using the mediums mentioned, only one or two very superficial pairs are seen.

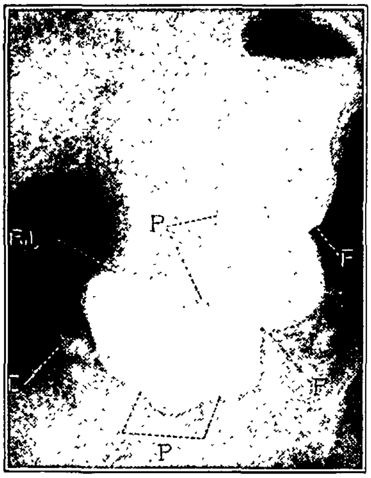


Fig. 2.—Deep peristaltic waves, indicated by *P*; *D* marks bismuth in duodenum. *Pyl.*, pylorus. One-half the bismuth meal was retained in the stomach after six hours. Operation showed obstructing ulcer of the duodenum.

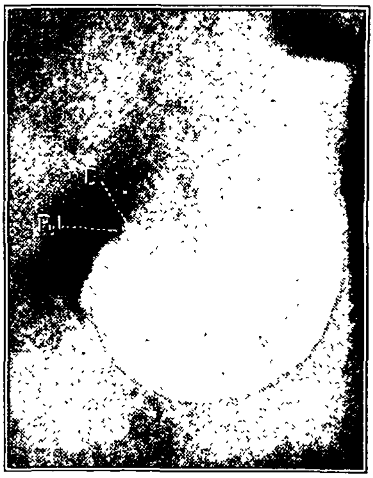


Fig. 3.—Same case as in Figure 2. Roentgenogram made immediately after that shown in Figure 2. *D*, duodenum; *Pyl.*, pylorus. Note absence of peristaltic indentations. This case illustrates the intermittency of the peristalsis.

This exaggeration of gastric peristalsis does not seem to be related to hyperacidity, because it has been noted in many of the cases of ulcer with moderate or low acidity. On the other hand, cases of gastric ulcer and appendicitis (the latter especially) with high acidity, have not shown this phenomenon. Neither does it appear to be merely compensatory to obstruction from stenosis of the duodenum, since we have seen it repeatedly where obstruction did not exist in sufficient degree to produce a six-hour residue, or to be evident at operation.

It has been my observation that stenotic lesions on the gastric side of the pylorus are rarely accompanied by gastric hyperperistalsis. Even if the peristalsis be greater than normal it is not likely to be bilateral, but will show its activity chiefly on the greater curvature. Here one is more likely also to see antiperistalsis, as I have in several cases. I have never seen antiperistalsis in duodenal irritation, even with obstruction.

The exaggerated peristalsis which may be evoked by massage of the epigastrium differs from the hyperperistalsis of duodenal ulcer in the fact that the former subsides very quickly after manipulation ceases. The hyperperistalsis of duodenal ulcer requires no external stimulation to induce it. During and immediately after the ingestion of the bismuth water, peristalsis often seems rather marked, but this soon subsides. After filling the stomach with the bismuth pap, on the contrary, the institution of peristalsis is quite commonly delayed for some minutes, reaching its maximum vigor still later. The hyperperistalsis of duodenal ulcer is quite commonly of an intermittent character. It may be noted on the screen but not seen on the plate, or vice versa. Hence observation should be prolonged until this sign has had time to appear.

The degree of peristaltic vigor is apparently influenced by the character of the opaque meal. The commercial condensed milks, which contain butter fat, markedly depress peristalsis. Fermented whole milk, buttermilk and potato-starch pap are admirable mediums and do not adversely affect peristaltic action. Bismuth oxychlorid is believed to produce more vigorous action than does the subcarbonate. This is also true of barium sulphate. It has also been observed that in plates made with the patient prone the peristaltic vigor is more pronounced than in plates made of the same patient when standing. For these reasons one should have a uniform technic, so that comparisons may be on the same basis.

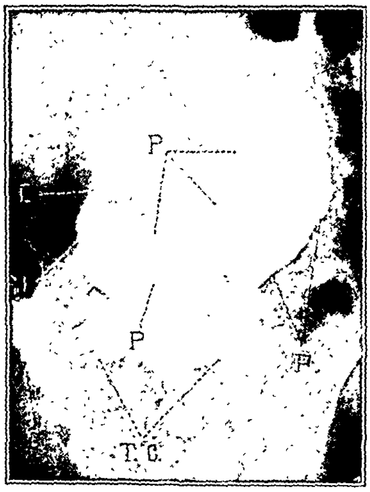


Fig. 4.—*Pyl.*, pylorus. *D*, duodenum. *P*, peristaltic waves. *C*, cecum. *T. C*, transverse colon. Vigorous peristalsis was more marked on the screen than on the plate. No obstruction. Operation showed semiperforating duodenal ulcer two inches below pylorus.

Exaggerated peristalsis above an irritative lesion of the digestive tube has been often observed radiologically and produced experimentally. In duodenal ulcer, duodenal irritation must exist as a constant or nearly constant factor. Why, then, is hyperperistalsis not seen constantly? Is its absence in some cases due to psychic influences such as fright or disgust for the bismuth meal? Is it sometimes delayed in appearance and thus overlooked in a brief examination? Is it because of peculiarities in the distribution of the nerve-supply? Does the situation of the ulcer play a part? All these are problems worthy of investigation.

SIX-HOUR RESIDUE

Of all the radiologic signs of lesions of the digestive tract the presence after six hours of a distinct residue from the barium or bismuth meal is perhaps the most important. The radiologist feels assured that almost without exception such a residue signifies an organic lesion, whether or not all his diagnostic deductions be confirmed. Theoretically, a residue may remain in simple atony and we have had one case (no operation) in which this was believed to be true; but of our cases with residue which came to operation every one was found to have some condition requiring surgical intervention.

A residue in the stomach from the barium or bismuth meal, six hours after its ingestion, occurs in a large proportion of cases of duodenal ulcer. This is often loosely spoken of as being due to pyloric obstruction, whereas the obstruction is actually in the duodenum and is produced by ulcer—scar contraction. Occasionally there will be found not only a six-hour residue in the stomach, but also a six-hour residue in the duodenum above the stenosis, thus enhancing its diagnostic value. A six-hour residue may, however, also be found in the stomach as a result of gastric ulcer or carcinoma, or thickening of the pyloric ring. A six-hour residue in the duodenum may result from bands of adhesions, or from the pylorospasm incident to gall-bladder disease.

DIVERTICULUM

The diverticulum of perforating duodenal ulcer is rather decisively diagnostic when found, but its rarity is shown by the fact that in the 198 cases herein reported only two showed this phenomenon, both of which were diagnosed radiologically.

HYPERMOTILITY WITH EARLY CLEARANCE OF THE STOMACH

At the screen examination, the bismuth water, immediately after being swallowed, is often seen to flow freely and spontaneously into the duodenum, sometimes visualizing the latter throughout. When the flow is not spontaneous, slight pressure on the stomach, or, as I have occasionally noted, pressure on the region of the appendix, may induce it. This relaxation of the pylorus is in such marked contrast to the resistance which it ordinarily offers to immediate evacuation of the stomach, and occurs so frequently in duodenal ulcer, that numerous theories have been advanced as to the mechanism of its production. Unfortunately, this sign is by no means pathognomonic of duodenal ulcer; it is often seen in association with lesions of the gall-bladder, chronic appendicitis, dilated or lax duodeni, neurasthenia, and other conditions, including carcinoma of the stomach. The flow through the gaping carcinomatous pylorus is usually so voluminous and continuous, however, that the experienced observer will rarely confound it with that noted in duodenal ulcer.

A natural sequence of this uninhibited flow is early evacuation of the stomach, and where successive interval examinations are made the stomach will often be found empty within half or less of the usual time. Some of our cases in which duodenal ulcer was suspected because of the rapid emptying of the stomach were found to be perfectly normal at operation.

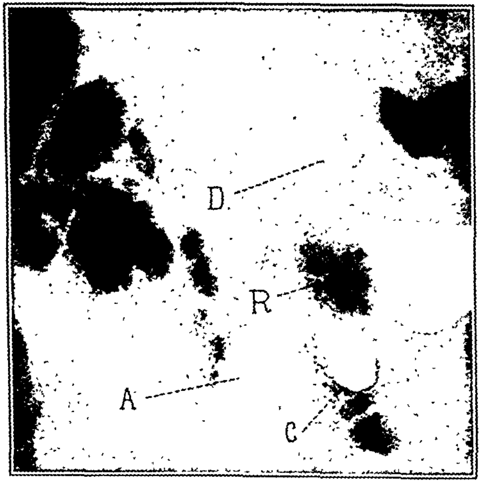
HYPERTONUS

Various degrees of gastric tone may occur in association with duodenal ulcer. With long-continued duodenal obstruction the stomach may become hypotonic or even atonic, through broken compensation. Such instances, however, are in the minority. More often an orthotonic or hypertonic stomach is found, and we have seen the latter so frequently that we have come to regard it as quite suggestive of duodenal ulcer, especially if the stomach be of the fish-hook form, and otherwise normal.

A hypertonic stomach alone is, of course, not necessarily diagnostic, but in general it may be stated that in duodenal ulcer the tendency is toward hypertonicity.

DEFORMITY OF OUTLINE

Irregularities in the outline of the bulbus duodeni, where most ulcers occur, have received considerable exploitation as a reliable indication of duodenal ulcer, chiefly by those radiologists who have depended on plate findings rather than on screen examinations. The technic involves the making of a large number of plates in a given case, and, to establish the diagnosis, every plate must show the same filling defect or deformity at a suspected point, a single plate showing a normal bulb being negative for ulcer. Irregularities of the duodenal wall are by no means pathognomonic of ulcer or even of a duodenal lesion. Distortion by adhesions from a cholecystitis, by pressure, or by incomplete filling is not at all uncommon, and deformity due merely to spasm is rather frequently seen. Further, as is observed in ulcers of the stomach, not all ulcers of the duodenum are sufficiently extensive to produce a local distortion that is radiologically demonstrable. The degree of distention of the bulb and duodenum and consequently the effectiveness of visualization of their outlines will depend in part on the ratio between the amount of bismuth flowing through the pylorus and the rate of duodenal evacuation. When the patient stands, the vertical bulbus, which commonly accompanies a fish-hook stomach, will better retain the bismuth by reason of gravity, while the more horizontal bulbus of a steer-horn stomach will drain more rapidly.



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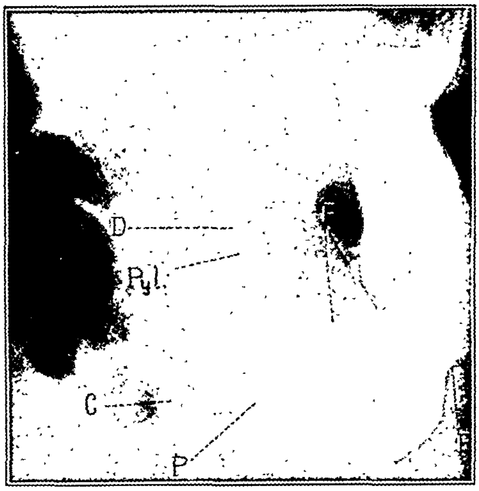

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As seen at operation three types of ulcer may be distinguished:

1. Those in which the ulcer is evidently limited to the mucosa, and is not seen externally because of the absence of scar tissue. Its presence is determined by the surgeon by palpation and to a less extent by an area of hyperemia, or by petechiae over the ulcer-bearing area after it has been rubbed with the palpating finger or with gauze.
2. Those with visible scar production but without marked contraction or deformity.
3. Callous ulcers with extensive cicatrization and accompanied often by stenosis.

Adhesions are rarely seen in the first type, occasionally in the second, and commonly in the third, especially if there be a perforation or an associated cholecystitis. In the first and second of the above-mentioned types deformity is either absent or so slight as to make its radiologic detection impossible. As a matter of fact, we have seen such ulcers in which no deformity was found either in the Roentgen-ray examination or at operation. In the third type the distortion may be radiologically evident, yet indistinguishable from that consequent on inflammatory lesions extraneous to the duodenum. In this type also stenosis may prevent effective filling of the duodenum with bismuth and thus render negative the diagnosis by this radiologic sign.

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PRESSURE-TENDER POINT

The value of a pressure-tender point over the duodenum as a diagnostic indication of ulcer is rather uncertain. If the contention be true that localized tenderness to pressure of an abdominal viscus exists only when the parietal serosa is involved, then early duodenal ulcers are exempt from this sign. As a matter of fact, tenderness over the duodenal region is quite frequently noted, but whether this tenderness is ascribed to ulcer or to a lesion of the adjacent gall-bladder depends largely on the bias of the observer toward the one or the other. The varying energy of the examiner's manipulation and the differing sensitiveness of patients are also uncertain factors. Yet a decidedly sensitive point, sharply localized to the visualized duodenum, deserves consideration as a contributory sign. Nearly all patients, with or without lesions, have more or less epigastric tenderness in the median line and this is usually without significance.

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One radiologist is on record as stating that he can diagnose duodenal ulcer in 100 per cent. of cases: that it is much easier to diagnose than gastric ulcer and that he can determine by the Roentgen ray whether or not the ulcer is healed. These claims are not in accord with my experience nor do they agree with the consensus of opinion of other radiographers. Such extravagant claims do much to bring radiology into disrepute and to prejudice surgeons and clinicians against it. While I believe that the Roentgen ray is perhaps the most valuable adjunct to clinical diagnosis, boastful pretenses and overenthusiasm which its spectacular accomplishments stimulate must be suppressed, in order that the skeptics, of whom there are a few, may not deprive their patients of its real benefits to which they are justly entitled.

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A radiologic diagnosis of duodenal ulcer was made in 135 of the 198 cases. In 19 a diagnosis was made of obstruction at or near the pylorus, without further attempt at diagnostic refinement. Sixty-eight cases, diagnosed on minor radiologic grounds as duodenal ulcer, were found at operation to have some other lesion, and of these, 29 were gall-bladder affections, 17 chronic appendicitis and 22 miscellaneous conditions.

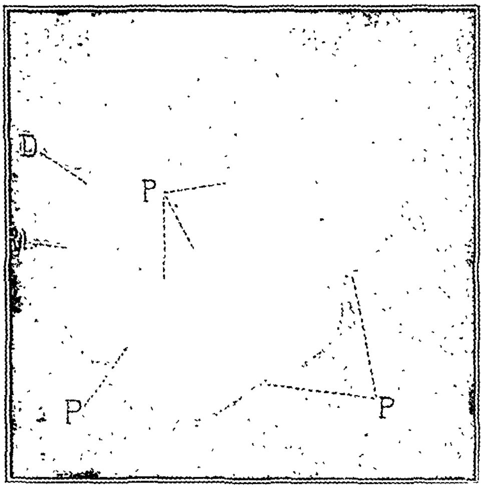

Fig. 7.—*P*, peristaltic waves, which were stronger at intervals on the screen. *Pyl.*, pylorus. *D*, duodenum. No obstruction. Operation showed callous ulcer of duodenum.

Hyperperistalsis, of various degrees, was noted in 113 (57 per cent.) of the 198 cases of duodenal ulcer. Residue was observed in 72 (36.3 per cent.) of the duodenal ulcer cases. Hyperperistalsis in conjunction with a six-hour residue is worth more than 95 per cent. in diagnosis and occurred in 49 (24.7 per cent.) of the 198 cases. This combination was seen in 3, or less than 1 per cent. of the 520 cases other than duodenal ulcer.

Six (3.7 per cent.) of 159 cases of lesions of the gallbladder manifested increased peristalsis. These are the cases which give the greatest difficulty in differentiating them from those of duodenal ulcer.

Hyperperistalsis was shown in 11 (3 per cent.) of the 361 cases of lesions other than duodenal ulcer or gallbladder.

The exaggerated peristalsis of duodenal ulcer does not appear to be related to the degree of hyperacidity. The average total acidity in eighty cases with hyperperistalsis was 69.7 per cent., while in seventy-two cases without hyperperistalsis the average total acidity was 74.8 per cent. The highest acidity noted, 120 per cent., occurred in a case with normal peristalsis.

Though the Roentgen ray often fails in the positive diagnosis of duodenal ulcer, its findings have an exclusion value. That is to say, the chance of some other lesion existing is minimized in proportion as the latter is radiologically determinable.

CONCLUSION

Hypermotility, hypertonus, deformity of the cap or bulb, lagging of bismuth in the bulb, pressure-tender point over the duodenum and spasm of the stomach are minor contributory radiologic signs of duodenal ulcer. The combination of hyperperistalsis and six-hour residue or a diverticulum, when found in an otherwise normal stomach, constitute about the only evidence on which a purely radiologic diagnosis of duodenal ulcer may safely be advanced.

FORMALDEHYD *

HUGH McGUIGAN, Ph.D., M.D.
CHICAGO

Previous investigation of this product has been confined principally to its antiseptic and toxic action. The present work aims mainly at the migration, fate and changes of the drug in the body. This is important since formaldehyd has been recommended in tuberculosis and sepsis, and its compounds are extensively used in therapeutics.

The disinfectant action of formaldehyd was first noted by Loew;[1] the first extensive work with it was reported almost simultaneously by Trillat[2] and Aronson,[3] though as early as 1888, Trillat made a note of the antiseptic action of formaldehyd on the urine. The studies of these investigators related mainly to its action on bacteria, higher animals being mentioned only incidentally. A most exhaustive study of its antiseptic and germicidal effect has been published by Anderson,[4] who also gives the literature.

The action of formaldehyd on higher animals was fully studied by Fischer.[5] His report differs decidedly from many of the previous workers, especially when the gas is inhaled. He states that the inhalation of even small quantities causes bronchitis and pneumonia. This appears contrary to the opinion of Aronson,[6] Fairbanks,[7] de Schweinitz,[8] Kobert,[9] Moeller,[10] Tunnicliffe and Rosenheim,[11] and others. The cause of this difference of opinion seems to be due to difference in methods of administration and time of observation. With strong concentrations of the gas or large doses there is always an inflammatory reaction which may be sufficient to

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* From the Pharmacologic Laboratory of Northwestern University Medical School.

[1] Loew: München. med. Wchnschr., 1888, xxxv, 412.

[2] Trillat: Compt. rend. Acad. d. Sc., 1892, cxiv, 1278.

[3] Aronson: Berl. klin. Wchnschr., 1892, No. 30, p. 749.

[4] Anderson: Bull. 39, Hyg. Lab. U. S. P. H., 1907.

[5] Fischer: Jour. Exper. Med., 1905, vi, 487.

[6] Aronson: Ztschr. f. Hyg., 1897, xxv, 168.

[7] Fairbanks: Centralbl. f. Bakteriol., 1898, xxiii, 20, 80, and 138.

[8] De Schweinitz: Yearbook, U. S. Dept. Agric., 1896.

[9] Kobert: Göbersdorfer Veröffentlichungen, 1898, i,

[10] Moeller: Quoted from Fischer: Göbersdorfer Veröffentlichungen, 1898, i,

[11] Tunnicliffe and Rosenheim: Jour. Hyg., i, 321.

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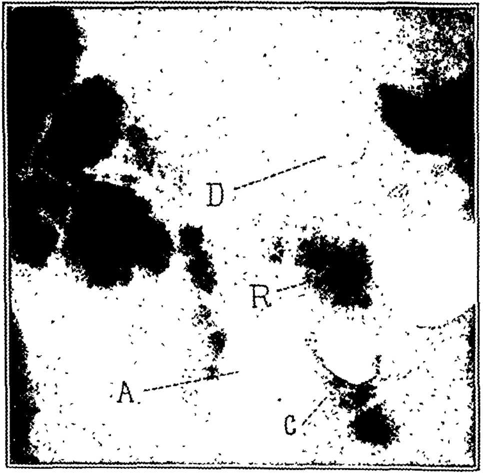

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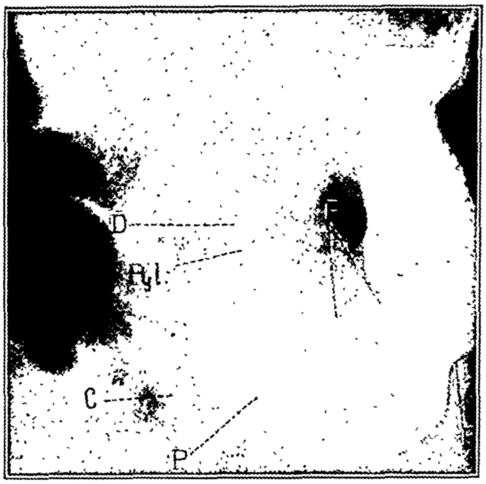

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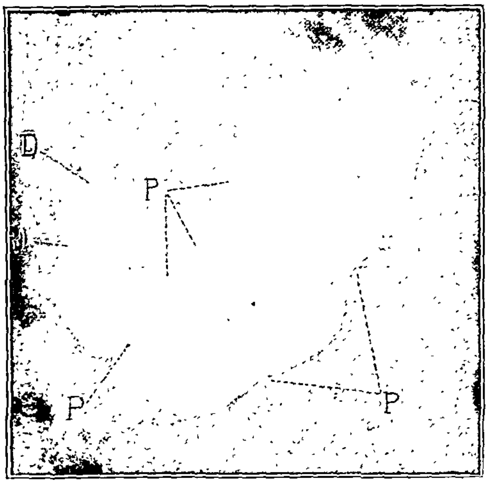

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CONCLUSION

Hypermotility, hypertonus, deformity of the cap or bulb, lagging of bismuth in the bulb, pressure-tender point over the duodenum and spasm of the stomach are minor contributory radiologic signs of duodenal ulcer. The combination of hyperperistalsis and six-hour residue or a diverticulum, when found in an otherwise normal stomach, constitute about the only evidence on which a purely radiologic diagnosis of duodenal ulcer may safely be advanced.

FORMALDEHYD *

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Previous investigation of this product has been confined principally to its antiseptic and toxic action. The present work aims mainly at the migration, fate and changes of the drug in the body. This is important since formaldehyd has been recommended in tuberculosis and sepsis, and its compounds are extensively used in therapeutics.

The disinfectant action of formaldehyd was first noted by Loew;[1] the first extensive work with it was reported almost simultaneously by Trillat[2] and Aronson,[3] though as early as 1888, Trillat made a note of the antiseptic action of formaldehyd on the urine. The studies of these investigators related mainly to its action on bacteria, higher animals being mentioned only incidentally. A most exhaustive study of its antiseptic and germicidal effect has been published by Anderson,[4] who also gives the literature.

The action of formaldehyd on higher animals was fully studied by Fischer.[5] His report differs decidedly from many of the previous workers, especially when the gas is inhaled. He states that the inhalation of even small quantities causes bronchitis and pneumonia. This appears contrary to the opinion of Aronson,[6] Fairbanks,[7] de Schweinitz,[8] Kobert,[9] Moeller,[10] Tunnicliffe and Rosenheim,[11] and others. The cause of this difference of opinion seems to be due to difference in methods of administration and time of observation. With strong concentrations of the gas or large doses there is always an inflammatory reaction which may be sufficient to cause death in a very short time. Again, recovery takes place rather rapidly from many pronounced inflammatory conditions produced by formaldehyd. Consequently an animal after a number of days may apparently not have suffered, while if it had been examined earlier an inflammatory condition would have been found. This is especially noticeable after intravenous injection when there is often an inflammatory condition of the eyes and respiratory tract which usually clears up in a few days. A little larger dose in such cases would often prove fatal. Aronson says, from results obtained in Zuntz' laboratory, that the lethal subcutaneous dose for a rabbit is about 0.24 gm. per kilogram of weight. On the other hand, marvelously slight effects have been reported from the inhalation of the formaldehyd vapor. De Schweinitz[8] kept a calf in 2 per cent. formaldehyd vapor for five hours without any ill effect other than watering of the eyes and occasional cough. Some observers have reported instances in which laboratory animals, accidentally or otherwise, were left in rooms which were being sterilized with formaldehyd without permanent ill effects, while others, under apparently similar conditions, found the animals dead. Perhaps the most astounding report is that by Lile,[12] who cites a case of tuberculosis in a man weighing at the time 110 pounds, far advanced in the disease and weak. The patient was placed in a room 12 by 12.10, and the room was gradually saturated with formaldehyd gas. The temperature, pulse, etc., was recorded by the patient himself, as the nurse could not enter the room because of the irritating gas. The patient was thus kept for four months and left the room weighing 140 pounds. After this he was allowed to sit in the open air and to take short walks. Only a few bacilli were now to be found in the sputum as compared with great numbers at the time of entrance. In the fifth month the patient left the hospital against the advice of the physician and was found six months later in an adjoining county in a dying condition. Lile believes that had he remained at the hospital he would have recovered. The improvement was attributed to the combination of rest and the formaldehyd gas treatment.

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* From the Pharmacologic Laboratory of Northwestern University Medical School.

[1] Loew: München. med. Wchnschr., 1888, xxxv, 412.

[2] Trillat: Compt. rend. Acad. d. Sc., 1892, cxiv, 1278.

[3] Aronson: Berl. klin. Wchnschr., 1892, No. 30, p. 749.

[4] Anderson: Bull. 39, Hyg. Lab. U. S. P. H., 1907.

[5] Fischer: Jour. Exper. Med., 1905, vi, 487.

[6] Aronson: Ztschr. f. Hyg., 1897, xxv, 168.

[7] Fairbanks: Centralbl. f. Bakteriol., 1898, xxiii, 20, 80, and 138.

[8] De Schweinitz: Yearbook, U. S. Dept. Agric., 1896.

[9] Kobert: Gübersdorfer Veröffentlichungen, 1898, i,

[10] Moeller: Quoted from Fischer: Gübersdorfer Veröffentlichungen, 1898, i,

[11] Tunnicliffe and Rosenheim: Jour. Hyg., i, 321.

It is impossible to give a just estimate to this report. It may be that the initial slight inflammatory reaction was beneficial. The treatment, however, cannot be recommended. Parallel cases have been adopted as worthy of support by scientific men. The formation of glycogen from formaldehyd in the turtle liver was reported by Grube.[13] Schöndorff and Grebe[14] have since shown that this statement is unworthy of further consideration. The rapid adoption of such a view depends on Baeyer's[15] theory of the formation of starches from formaldehyd in plants and the close relationship of glycogen to starches and sugars.

That the action of formaldehyd vapor may be beneficial is, however, contrary to the experience of most workers. Dr. A. I. Kendall tells me that guinea-pigs which were left accidentally in a room during fumigation soon developed pneumonia and died. Others have had a similar experience. The eyes especially were affected. We have noticed some action on the eyes in animals to which the drug was administered intravenously. Inflammation and cloudiness developed in a short time in some cases. This is of interest in view of the well-known action of methyl alcohol on the eye and optic nerve. Methyl alcohol is oxidized to formaldehyd in the body, and it may be that its action on the eye is due to the formation of formaldehyd or formic acid. All animals thus affected recovered in the course of a week, without permanent ill effects.

It is this recovery from large doses that apparently explains the difference of quoted opinions. There is no question that even small doses may, and usually do, give rise to inflammatory conditions, but even in severe cases of intoxication, in which without doubt there was considerable inflammation, recovery without permanent ill effects may, and often does, occur. Recovery has been reported in cases of formaldehyd poisoning in man, in which there was shock, convulsions, collapse and undoubtedly inflammation.[16] The symptoms reported to be present in rabbits when given a toxic dose per os or hypodermically are clonic tetanus, opisthotonos and irregular respiration, leading to early death. Death from inhalation of the vapor is usually due to pneumonia, consequently the symptoms differ from those which exist when the drug is given by mouth.

ABSORPTION OF FORMALDEHYD FROM THE LUNGS

It may be thought from some of the previous statements that formaldehyd is but slightly absorbed from the lungs. It is, however, rapidly absorbed as the following protocol will show.

Experiment 1.—April 9, 1913, a small dog was given 2 c.c. of 2 per cent. morphin and etherized after thirty minutes. The vagi were cut and a tracheal cannula inserted. The animal was allowed to breathe through a 25 per cent. dilution of liquor formaldehydi for fifteen minutes. There was little influence on the blood-pressure. Respiration could not be observed under the conditions. The blood gave a positive test for formaldehyd after fifteen minutes and it was still positive one hour after the removal of the respiratory bottle. It may be that morphin makes some combination with formaldehyd and holds it in the blood longer than it would remain normally without the morphin.

GASTRO-INTESTINAL ABSORPTION

Experiment 2.—Aug. 7, 1911, a dog weighing 5 kg. was given 0.1 gm. morphin hypodermically. At 11:15, profuse vomiting followed.

At 11:45, 2.5 c.c. liquor formaldehydi in 75 c.c. water was given by stomach-tube. At 11:50, no vomiting, but retching and twitching movements occurred. At 1:25, bowels moved freely, water-like, and the excreted matter answered to the formaldehyd test.

At 1:45, 34 gm. of blood were taken and distilled, and reacted to formaldehyd tests.

Post-Mortem Examination.—The intestines were markedly inflamed and full of fluid. The urine was strongly alkaline to litmus and effervescent with acid, but gave neither formic acid nor formaldehyd reactions.

ABSORPTION FROM STOMACH

Formaldehyd is also absorbed from the stomach as shown when the drug is introduced into the stomach ligated at the pyloric and cardiac ends. In such a case it can soon be found in the blood and urine. While the formaldehyd is absorbed from the entire gastro-intestinal tract, it is also excreted into it. This is readily seen when the drug is given hypodermically or intravenously. There is some difference in the symptoms, depending on whether the drug is administered by the stomach or intravenously. The following protocol will illustrate this difference.

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[12] Lile, S.: A Tuberculous Patient's Endurance of Formaldehyd Gas, Queries and Minor Notes, The Journal A. M. A., Feb. 12, 1910, p. 554.

[13] Grube: Arch. f. d. ges. Physiol., 1908, cxxi, 636.

[14] Schöndorff and Grebe: Arch. f. d. ges. Physiol., 1911, cxxxviii, 535.

[15] Baeyer: Ber. d. deutsch. chem. Gesellsch., 1870, iii, 63.

[16] Hoyt, Henry F.: Formaldehyd Poisoning, The Journal A. M. A., April 9, 1910, p. 1202.

Experiment 3.—Two medium-sized dogs were given a preliminary dose of morphin after which each was given a large dose of formaldehyd (50 c.c. 1 per cent. solution). One dose was given intravenously, the other by stomach-tube. This was followed by depression in both animals. The animal which received the drug by stomach was more depressed and more uncomfortable than the other. Twenty-four hours later both animals were killed and the intestinal tract of each examined. Both tracts were highly inflamed and the one from the dog that received the drug intravenously was extremely edematous. Large blebs covered the entire stomach to a most extreme degree. The picture strongly suggested a formic acid action, and formic acid is formed from formaldehyd in the body.

We cannot say that all cases would show such differences. It depends on the mode of administration. We know that when aldehyds are treated with alkalies *in vitro*, a change, known as the Cannizzaro reaction, takes place:

$$2\ \mathrm{RCHO} + \mathrm{H_2O} \rightarrow \mathrm{RCH_2OH} + \mathrm{R.COOH}$$

That this reaction can also take place *in vivo* is shown by the following facts which I have corroborated: Pohl[17] demonstrated that saline extracts of the liver can oxidize formaldehyd to formic acid. This is in harmony with the previous work of Schmiedeberg[18] and of Jaquet,[19] who showed that tissue extracts could oxidize aromatic aldehyds. The amount of these oxidations is small, however, when compared with that which occurs in the living organism. The presence of formic acid in the urine was first shown by Buliginsky,[20] and Schotten[21] also proved its presence in urine. Recently Dakin and Wakeman,[22] and still more recently Dakin, Wakeman and Janney[23] have demonstrated the presence of formic acid in the urine and think that it is a catabolite of the higher fatty acids as well as of proteins and carbohydrates. Normal urine contains formic acid, but no formaldehyd. This can be shown by reduction of the urine with magnesium, after which it gives formaldehyd reactions. This varied source of acid gives no support to Baeyer's theory of the formation of carbohydrates unless we modify it to apply also to other foodstuffs.

That formic acid may be easily formed in the body from formaldehyd the following experiment will show.

Experiment 4.—July 15, 1911, a dog, weighing 5 kg. was anesthetized with morphin and ether. From 10:20 till 12:02, 102 c.c. of 1 per cent. solution of formaldehyd in equal parts of eighth molecular sodium sulphate and 0.9 per cent. sodium chlorid was injected into the carotid. The object of the salines was to promote rapid elimination.

At 12:30, 30 c.c. of blood was taken, acidified with phosphoric acid and distilled. The distillate showed that formaldehyd was still present in the blood.

At 1, the animal was bled to death and the blood distilled as before. No formaldehyd was found. Later work would indicate that there must have been a trace still present. At this time 90 c.c. of acid urine was collected. Distilled from phosphoric acid, the distillate was acid. It contained no formaldehyd, as shown by Hehner's test. It reduced silver nitrate with the formation of a mirror.

In most cases the urine contains a mixture of the acid and aldehyd. When these urines, however, were tested for formaldehyd and afterward reduced with magnesium the test was always stronger after than before reduction, showing that formic acid must have been present. Blood and liver tissue will also oxidize formaldehyd to formic acid.

While this oxidation readily takes place it can be shown that a simultaneous reduction also recurs. If instead of injecting formaldehyd, we use formic acid, free from formaldehyd, a formation of the aldehyd in the body can soon be demonstrated. Dogs which were given formic acid or formates by mouth showed the presence of formaldehyd in the urine though the phosphoric acid distillate of the urine was strongly acid and suggested that most of it was excreted as the salt of the acid. In small doses or when given slowly, much of it may appear as carbonate.

Experiment 5.—June 16, 1913, a dog weighing 7 kg. was given a small dose of morphin, and thirty minutes afterward 25 c.c. of 25 per cent. formic acid which had been neutralized with sodium hydroxid. This was mixed with milk to a volume of 300 c.c. and given by stomach-tube. During the next thirty minutes the dog vomited probably one-third of it. The urine was collected for eighteen hours; 300 c.c. of urine was obtained, which was strongly alkaline in reaction and effervescent vigorously when acid was added. Tested directly with the Jorrisen, Hehner and Leach tests it showed the presence of formaldehyd. The Jorrisen test was very weak, indicating that most of the formaldehyd was combined, probably as hexamethylenamin. There was enough albumin in the urine to give a color with the Leach test without the addition of milk. Distilled with phosphoric acid, the distillate was strongly acid but also gave strong tests for formaldehyd.

The oxidation and reduction, therefore, as shown by the Cannizzaro reaction, is not confined to aldehyds, but occurs also with acids and probably with other bodies as alcohols, etc. The main action, however, is an oxidation, and it is only after relatively large doses of formic acid salts that the aldehyd can be detected. There is no formaldehyd in normal urine, while a small amount of formic acid is always present.

THE PERSISTENCE OF FORMALDEHYD IN THE BLOOD

Small doses of formaldehyd disappear rapidly from the blood. When it is injected intravenously there is a fall of pressure the extent of which depends on the amount injected. The pressure gradually comes back to normal. If a sample of blood be taken just as the pressure again reaches the normal height, it will be found that there is only a small amount of formaldehyd in the blood. Perhaps this small amount is due to hexamethylenamin formation. The disappearance of the formaldehyd from the blood seems to occur *pari passu* with the rise of the pressure to the normal. This would suggest that the fall of pressure is due to an action of the drug on the vessel-wall or as it passes through the wall[24] (compare Straub's theory of the action of epinephrin, muscarin, etc.). The disappearance from the blood is not a mere penetration into the tissues, but an oxidation. This is shown by the presence of formic acid and carbonates in the urine and by the very small amount, if any, of formaldehyd that can be obtained by dialyzing the normal circulating blood after the pressure has returned to normal. Hexamethylenamin has no such action; it remains in the blood much longer, and can readily be removed by dialysis. After a single dose of 0.5 gm. (7½ grains) by mouth, we have found it for forty-eight hours in human milk.

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[17] Pohl: Arch. f. exper. Path. u. Pharmakol., 1897, xxxviii, 65.

[18] Schmiedeberg: Arch. f. exper. Path. u. Pharmakol., 1881, xiv, 288 and 379.

[19] Jaquet: Arch. f. exper. Path. u. Pharmakol., xxix, 386.

[20] Buliginsky: Hoppe-Seyler, Medicinisch-Chemisch Untersuchungen, 1867, p. 234.

[21] Schotten: Ztschr. f. physiol. Chem., 1882, vii, 375.

[22] Dakin and Wakeman: Jour. Biol. Chem., 1911, ix, 329.

[23] Dakin, Wakeman and Janney: Jour. Biol. Chem., 1913, xiv, 341.

[24] Straub: Quoted from Meyer-Gottlieb, Verhandl. d. phys.-med. Gesellsch. in Wurzburg, 1907.

Most investigators assume that the reaction of formaldehyd with protein takes place with the amino group of the molecule,[25] an assumption that most chemists would make. The difference between the action of formaldehyd and hexamethylenamin favors this assumption. The combination with protein resembles hexamethylenamin, but the combination of formaldehyd with ammonia is so much stronger than the protein combination that when hexamethylenamin is introduced into the stomach or veins little immediate action is apparent for the reason that no detectable amount of it is decomposed by the blood or body-cells. Consequently, it remains in the blood a much longer time. We have not yet decided whether the prolonged administration of hexamethylenamin leads to a greater decomposition. There is a remote possibility that some of the nephritis that develops after prolonged use may be due to this fact.

The short retention of formaldehyd in the blood partly explains the failure of the drug to benefit cases of sepsis and tuberculosis when administered by mouth or intravenously, as has been done. To have any therapeutic value a drug must have physical and chemical properties that will insure the possibility of action. Formaldehyd has not these properties. It is rapidly oxidized with the formation of highly irritating formic acid without having any compensating virtues, and this removes it from the field of internal therapeutics. Cases have been reported in which undoubtedly great injury was done to the patient by the unwarranted intravenous injection of formaldehyd solutions. It is quite probable that quinin, which possesses no irritating qualities, would be without action if it were removed from the blood as quickly as is formaldehyd. It is impossible, therefore, in view of the irritating action and the short duration of the drug in the blood, to see any place in internal medicine for the use of formaldehyd. Any reported benefit that has followed intravenous injections must be attributed, as commonly accepted, to the saline administered with it.

ACTION AFTER ABSORPTION

Respiration is somewhat stimulated, but the action is transient, perhaps because of the irritation, also the rapid oxidation. The heart is weakened by large doses owing to a direct action, as it is after atropin. Both heart and respiration soon return to normal. The blood-pressure is reduced apparently only while the drug is passing through the vessel-walls, for if the blood is tested after the return of the pressure to normal little or no formaldehyd can be found. After large doses and to some extent after small doses, formaldehyd causes an edema. This may in part be due to the formation of formic acid.

The following protocol will illustrate the general action of the drug after absorption:

Experiment 6.—Aug. 7, 1911, a dog weighing 7 kg. was given 10 c.c. of a morphin solution in divided dose hypodermatically. Fifteen minutes later, at 3:30, 2.5 c.c. of liquor formaldehydi in 100 c.c. milk were given by stomach-tube. There was no vomiting after the formaldehyd. The object of the morphin was to prevent this.

At 10 a. m., it was noted that only 6 c.c. of urine were passed during the night. The bladder, however, contained 88 c.c. The tests for formaldehyd were moderately strong. There were no morphin tests positive. The apparent reason for the retention of the urine in the bladder was the irritation which it caused in the urethra. An intravenous injection of 2.5 c.c. formaldehyd with 10 c.c. 4 per cent. morphin sulphate was made to 50 c.c. in 0.9 sodium chlorid. There were no symptoms of morphin action. The action is more like hexamethylenamin than formaldehyd. Morphin and formaldehyd are antagonistic so far as the respiratory center is concerned, also the action on the intestine, and to some extent the general action.

At 11:30, the respiration was less frequent. The animal was quiet. Apparently the formaldehyd action disappears before the morphin. At 1, 6 c.c. of thick and muddy urine, gave strong positive tests for formaldehyd. Blood gave weak but positive tests for formaldehyd. There was no griping or intestinal gurgling or movements which usually follow formaldehyd. The animal was killed with chloroform and the tissues examined by the local department of pathology.

Post-Mortem Examination.—The vessels of the kidneys and liver were passively congested. The cells were normal. There were no lesions of the other organs. No morphin could be found in the urine. The amount of inflammation was much less than was expected.

Only after large doses do we find anything like the marked inflammatory changes recorded by Fischer. This may be due somewhat to the use of morphin, which is antidotal. The alkaline urine which is sometimes found suggests that one means of neutralizing the aldehyd in the body may be the liberation of ammonia. Francis and Fortescue-Brickdale[26] state that hexamethylenamin is formed in the body. As ammonia is always present in the blood we might expect this. With Mr. C. L. v. Hess, I have been able to find evidence in favor of it. By dialyzing the normal circulating blood through collodion membranes (a modification of Abel's method) we obtained a dialysate after the administration of formaldehyd that was negative with Jorrisen's test for free formaldehyd, but which was positive when tested by Hehner's test, which reacts with combined formaldehyd. In other cases I have been able to demonstrate hexamethylenamin in the urine, by the bromin test,† when only formalin had been administered intravenously. There was no protein reaction, and morphin which also interferes with this test, had not been given.

THE ACTION OF FORMALDEHYD ON BLOOD-PRESSURE

Experiment 7.—April 30, 1912, a dog weighing 8 kg., under ether anesthesia, was given in the femoral vein, successive injections of 2, 4, 8 and 16 c.c. of 2.5 per cent. solution of formaldehyd. The pressure was taken from the carotid. The smaller doses have very little effect. The larger cause a quick fall with a gradual return. The fall is due to a direct action of the drug on the heart and vessels since atropin does not change the action. When the normal pressure is again attained, little if any formaldehyd can be found in the blood. The action on the blood was not investigated. Apparently it is not strikingly altered though Benedicenti[27] considered it important.

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[25] Benedicenti: Arch. f. Physiol., 1897, p. 211.

[26] Francis and Fortescue-Brickdale: Chemical Basis of Pharmacology, 1908, p. 71.

† The tests used for formaldehyd are those described in Official and Provisional Methods of Analysis, Bull. 107, Bureau of Chemistry, U. S. Dept. Agric. The tests to distinguish between free formaldehyd and its compounds, as hexamethylenamin, depend on the fact that strong alkalies will not decompose hexamethylenamin. Consequently any test in which the reagent is strongly alkaline may be used to test for free formaldehyd as it is the free body that gives the test. The bromin test (Nicolaier's) for hexamethylenamin depends on the fact that hexamethylenamin when treated with bromin water forms a tetrabrom compound which appears as a yellow precipitate. It is not nearly so delicate as the formaldehyd tests, its limit being about 1:20.000. To show the formation of hexamethylenamin in the blood after the injection of formaldehyd, artificial blood-vessels composed of collodion were interposed between the carotid artery and jugular vein so that these could be immersed in water and the normal circulating blood allowed to dialyze through the collodion. In this way it was found that after the intravenous injection of formaldehyd hexamethylenamin was found in the dialysate. Abel and collaborators have described this method in the Journal of Pharmacology and Experimental Therapeutics January, 1914, p. 275.

C. C. Guthrie[28] found that formaldehyd, when present in blood in a concentration of from 1:900 to 1:740, produced a moderate though decided decrease in the hemolytic power of the serum. This soon approached the normal again. It clotted less readily and did not putrefy so quickly. Whatever the blood change, it must be exerted mainly on the cellular elements, because there is but little action on ferments. The rather weak action on enzymes was shown by Price,[29] and can be readily confirmed. The action of ptyalin and amylopsin on starch solutions containing 1:2500 formaldehyd is not retarded. In milk the same concentration does not alter the effect of rennin, pepsin, pancreatin or steapsin. Stronger concentrations than these have some inhibiting action. This weak effect on enzymes would indicate that if the nitrogen of the enzyme be important in its action it is probably not in the amino form. The stable compound which formaldehyd forms with protein would seem to be amino-nitrogen. The enzyme nitrogen must be different, and since enzymes represent the more dynamic form of protein—if protein at all—the rather inert action of the formaldehyd on them can best be explained by assuming a difference in the structure of dead and living matter. Eggs, milk and proteins generally readily absorb formaldehyd just as ammonia does.

EXCRETION OF FORMALDEHYD

We would expect to find formaldehyd in the body in the same places in which hexamethylenamin is found, and I have found the latter in almost all of the body fluids (confirmatory of others). Formaldehyd, however, does not penetrate so widely as hexamethylenamin — at least it is harder to find as widely distributed. It is excreted mainly in the urine, gastro-intestinal tract and by the lungs. Excretion by the lungs can readily be shown by administering the drug intravenously and letting the animal breathe through milk which can be tested directly.

GENERAL DISCUSSION

Formaldehyd has continued to occupy a prominent place in chemistry, biology and medicine ever since Baeyer[15] suggested that the formation of sugar in plants is due to a condensation of formaldehyd into dextrose. From this theory we should expect to find formaldehyd in the body as a degradation product of carbohydrates and perhaps proteins. It must be said, however, that while the theory is still strongly adhered to, there has been comparatively little evidence presented for it either from the plant or animal kingdoms. So plausible does the theory seem that the since discredited work of Grube,[13] which claimed to prove a formation of glycogen in the turtle liver when it was perfused with a solution of formaldehyd, was readily accepted. The presence of formaldehyd in plants has been established with certainty only recently,[30] and that in very minute amounts. Formic acid is more often found and would seem to be of more importance than the aldehyd, but even this is not found most abundantly where the theory would best place it—in those plants which form starches and sugars in greatest quantity.

The possible utilization of formaldehyd in the body, together with its great antiseptic action, would seem to make it an important drug in medicine. There is no fact, however, in favor of its internal use. It has no specific action for any known bacterium, plasmodium or other causal agent. In usable amounts it supplies no energy and acts only as a foreign body and fatigue agent. It is oxidized very rapidly and the product possesses only injurious influence. Some formic acid occurs as an apparently constant constituent of the urine, but it is probably not an essential constituent, since more has been found in old putrefying samples than in fresh. Not only is there no specific affinity of formaldehyd for bacteria, but within the body the evidence favors the opinion that it preferably unites with dead material or inorganic bodies such as ammonia. To be effective as a therapeutic agent in infective cases a drug must either have some selective action for the invading organism or must have some property of stimulating the protective mechanism of the body. There is no evidence that formaldehyd exerts either. Van't Hoff[31] suggested that the action of formaldehyd as an antiseptic was due to its using up the oxygen and so indirectly asphyxiating the organism. Koch[32] rendered this suggestion untenable by showing that formaldehyd also inhibits the action of anaërobic life. From the symptoms and action on higher forms the mechanism of the action seems to be first a fatigue effect. This comes from the work of the tissues in the attempt to oxidize the substance. The great fatigue causes a probable rearrangement of the living molecules which resembles death. In this rearranged condition formaldehyd forms a strong combination and prevents recovery and return to normal. With small amounts recovery may take place through a mass action or actual replacement of the injured cell or molecule. The nitrogen of the molecule is probably the point of attack, since all oxidations take place mainly in the form elements and especially in that part of the form element which contains the most nitrogen—nucleoproteins.[33]

Most theories advanced to explain the difference between dead and living matter make the condition of the nitrogen the nucleus of their explanation. The action of formaldehyd lends some support to this opinion. It is readily oxidized by living matter and is hard to detect after a short time in the body, while in dead matter it can be detected after an indefinite term. The stability of the dead compound resembles the ammonia combination, and the dead protein combination is most probably with the amino group. With living matter the union is probably also with the nitrogen atom, but this is manifestly different from the more stable compound.

CONCLUSIONS

Formaldehyd is rapidly absorbed from all parts of the gastro-intestinal tract and lungs, and may be excreted again by them. It is rapidly oxidized in the body to formic acid and carbonates. There is also a small amount of a dialyzable compound formed in the blood, which is most probably hexamethylenamin, since the latter is found in the urine (bromin test).

Small amounts of formaldehyd may pass through the body without causing apparent inflammation, while larger amounts always cause some.

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[27] Benedicenti: Arch. f. Anat. u. Physiol., 1897, p. 210.

[28] Guthrie, C. C.: Am. Jour. Physiol., 1904, xii, 139.

[29] Price: Twentieth Annual Report of the Bureau of Animal Industry, 1903, p. 114.

[30] Curtius and Franzen: Ber. d. deutsch. chem. Gesellsch., 1912, xlv, 1715.

[31] Van't Hoff: Vorlesungen über theoretische und physikalische Chemie: ii, 118.

[32] Koch: Am. Jour. Physiol., 1902, vi, 325.

[33] Lillie: Am. Jour. Physiol., 1902, vii, 412.

Recovery from severe inflammatory reactions may be rapid and apparently complete.

Formaldehyd depresses the heart by direct action. Its action on respiration is transient and apparently the result of irritation, though the quick oxidation would account for some of the increase.

Formaldehyd causes a stimulation of the intestinal movements which in large doses is extreme.

The antiseptic action of formaldehyd is apparently due to fatigue, exhaustion and a final firm combination with the drug.

There is nothing to indicate that the drug has a field of usefulness in medicine other than for local use.

Morphin and ammonia are antidotes.

OBSERVATIONS OF THE RESULTS OF NINE MONTHS' EXPERIENCE WITH NEOSALVARSAN AT THE UNITED STATES MILITARY PRISON HOSPITAL, FORT LEAVENWORTH, KAN.

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AND
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From April 1, 1913, to Jan. 10, 1914, neosalvarsan combined with intensive mercurial treatment has been the routine followed in all syphilitic cases treated at the United States Military Prison Hospital, Fort Leavenworth, Kan.

One hundred and eight cases of syphilis have been treated during the period mentioned. Three hundred and forty intravenous injections of neosalvarsan have been given. The "intravenous puncture" has been the method employed in all cases. The character of the reactions following injections were as follows: no reaction, 278; severe, 1; moderate, 3; mild, 58. We have considered all cases severe that ran a temperature above 102 F., with or without other symptoms; moderate, when the temperature ranged from 100 F. to 102 F.; mild, normal temperature to 100 F. Cases have been deemed as having no reaction when there was no temperature and no symptoms.

TABLE 1.—REACTIONS ACCORDING TO THE STAGE OF DISEASE

Stage of Disease	Number of Cases	Total No. of Injections	Reactions				Percentage Neg. Reaction
			Severe	Moderate	Mild	None	
Primary	5	25	0	0	6	19	76
Secondary	53	265	1	0	44	220	83
Tertiary	2	10	0	0	0	10	100
Latent	8	40	0	3	8	29	72.5
Total	68	340	1	3	58	278	82.7*

* Average Negative.

In order to insure uniformity of technic only those cases have been selected for use in the following tables in which all of the serum tests have been performed by the same medical officer. In sixty-eight of our cases the serum tests were performed by Capt. Charles Craig, Medical Corps, U. S. Army.

A study of Table 1 shows that the smallest number of reactions occurred in the secondary and tertiary cases. Taking all cases collectively, 82.7 per cent. had no reaction.

The patient having a severe reaction ran a temperature ranging from 102 F. to 104 F. for three days, with severe frontal headache, pain in eyeballs, frequent chills, pain in bones and muscles, vomiting and mild delirium. No reason could be given for this reaction. Twelve men received injections on the same date, the same freshly distilled water being used in each case, there was no other reaction on this date. The general physical condition of the man was excellent. On the fourth day the temperature dropped to 101 F. The gradual decline in temperature and abating of symptoms continued until the patient was discharged from hospital on the seventh day. No symptoms since discharge.

TABLE 2.—THE RESULTS OF TREATMENT WITH NEOSALVARSAN ON THE COMPLEMENT-FIXATION TEST IN THE VARIOUS STAGES OF SYPHILIS

Stage of Disease	Total Cases	Became Negative		Remained Positive	
		No.	Per Cent.	No.	Per Cent.
Primary	5	0	0	5	100
Secondary ...	53	19	35.4	34	64.6
Tertiary	2	1	50	1	50
Latent	8	3	37.5	5	62.5
Total	68	23	33.3	45	66.7

The three moderate reactions all occurred in latent cases, and strangely all complained of the same symptoms, namely, severe pain in back, with frequent desire to urinate. The examination of the urine showed a slight albuminuria in two cases. The symptoms persisted for three or four days, then gradually subsided. The fifty-eight mild cases ran a temperature of 98.6 F. to 100 F. Outside of an occasional headache and general feeling of malaise, there were no symptoms of interest.

Table 2 will show the percentage of cases that have become negative after eight months' treatment. Every patient has received at least five injections of neosalvarsan combined with intensive mercurial treatment.

The mercurial treatment given the cases here reported is as follows: Between April 1 and Aug. 15, 1913, mixed treatment was used in all cases, each individual case had one month of this treatment. Following mixed treatment, proto-iodid of mercury was used for a period of two weeks. After Sept. 1, 1913, intramuscular injections of mercury salicylate of 100 mg. each were given. An average of five injections has been given in each case. In addition to the above, each case is given mercurial inunctions of 6 gm. each on admission to the hospital for neosalvarsan. Our cases average to remain in hospital two days, and as the treatment is given on the morning of discharge, three inunctions have been taken by each case, making a total of fifteen inunctions given each of the sixty-eight cases here reported.

It may appear strange to some that patients are admitted to hospital for neosalvarsan injections. The regulations at this institution are such that this procedure is necessary. About 15 per cent. of the cases reported in this paper, however, are among the prison guard and enlisted men of the staff corps. None of these patients have been admitted to hospital and not one has shown any reaction after injections of neosalvarsan.

A study of Table 2 shows that 33.3 per cent. of our cases have become negative, while 66.7 per cent. still remain positive. While the number of primary and tertiary cases are small, we believe that larger numbers might alter the results.

TABLE 3.—RELATION OF THE STAGE OF SYPHILIS TO THE TIME OF DISAPPEARANCE OF COMPLEMENT FIXATION AFTER TREATMENT WITH NEOSALVARSAN

Stage of Disease	Total Cases	Month								Total Negative
		1st	2d	3d	4th	5th	6th	7th	8th	
Primary	5	0	0	0	0	0	0	0	0	0
Secondary	53	1	0	0	2	2	4	3	7	19
Tertiary	2	0	0	0	0	0	0	0	1	1
Latent	8	0	1	0	1	1	0	0	0	3
Total	68	1	1	0	3	3	4	3	8	23

In an article by Craig[1] a table similar to Table 2 of this paper is published. Craig's table shows that 57.6 per cent. of his cases became negative, and 42.4 per cent. remained positive after one injection of salvarsan. Table 2 of this article shows that after five injections of neosalvarsan 66.7 per cent. still remained positive.

In the article by Craig,[1] quoted previously, a table is given to illustrate the disappearance of the serum reaction after treatment with salvarsan in weekly periods. In this table a total of 288 cases are taken; 24 became negative after the first week, 108 were negative after the second week, 176 after the third week, 232 after the fourth week, etc.

TABLE 4.—RELATION OF THE INTENSITY OF THE COMPLEMENT FIXATION TO THE DISAPPEARANCE OF THE REACTION AFTER TREATMENT WITH NEOSALVARSAN

Character of Reaction*	Total Cases	Became Negative		Remained Positive	
		No	Per Cent.	No	Per Cent.
++	40	13	32.5	27	67.5
+	19	6	32.5	13	67 5
+—	9	4	44.6	5	55.4
Total	68	23	33.3	45	66.7

* A ++ reaction represents an absolute inhibition; a + reaction, any degree between 75 per cent. and an absolute inhibition; a +— any degree between 50 per cent. and absolute hemolysis.

Craig says in speaking of the table referred to, "It will be noted that considering the total number of cases, the greatest number became negative during the second, third and fourth weeks after administration of the drug, and that in our experience none of the cases became negative after eight weeks." In other words, the total of 288 cases were all negative by the eighth week following one injection of salvarsan.

Referring to Table 3 of this article, 1 of our cases became negative after the first month, 2 after the second month, 5 after the fourth month, 8 after the fifth month, etc. In other words, after twenty weeks, 8 out of our sixty-eight cases were negative, whereas all cases became negative in eight weeks with salvarsan treatment in Craig's cases.

A study of Table 4 shows that the stronger the reaction, the smaller the number of cases that became negative. The best results have been obtained in those cases showing a + — reaction. Cases showing a + + and + reaction have each given 32.5 per cent. of negative reactions. This has also been true in a large number of reports that have been made on salvarsan.

An analysis of Table 5 shows that 1 of our cases became negative in one month, 5 were negative after four months, 9 after five months, etc. In other words, regardless of the intensity of the reaction, 9 of our 68 cases became negative after over twenty weeks of combined mercurial and neosalvarsan treatment. The majority of our 68 cases had received five injections of neosalvarsan before the twentieth week.

TABLE 5.—RELATION OF THE INTENSITY OF COMPLEMENT FIXATION TO THE TIME OF DISAPPEARANCE OF THE REACTION AFTER TREATMENT WITH NEOSALVARSAN

Character of Reaction	Total Cases	Month								Total
		1st	2d	3d	4th	5th	6th	7th	8th	
++	40	1	0	0	1	2	3	3	3	13
+	19	0	0	0	2	1	0	0	3	6
+—	9	0	0	0	1	1	1	1	0	4
Total	68	1	0	0	4	4	4	4	6	23

Table 8 of Craig's article, before referred to, is similar to Table 5 of this paper, with the exception that weeks instead of months are taken to illustrate the time of the disappearance of the reaction after treatment with salvarsan. This table shows a total of 288 cases; 145 were + +, 110 were + and 33 were + —. Craig states in writing of this table that "the reaction, regardless of its intensity, disappeared most frequently during the second, third and fourth weeks after the administration of

TABLE 6.—RELATION OF THE STAGE OF SYPHILIS AND THE INTENSITY OF THE COMPLEMENT FIXATION TO THE DISAPPEARANCE OF THE REACTION AFTER TREATMENT WITH NEOSALVARSAN

Stage of Syphilis	Character of Reaction	Total Cases	Became Negative		Remained Pos.	
			No.	Per Cent.	No.	Per Cent.
Primary (5 cases)	++ + +—	1 3 1	0 0 0	0 0 0	1 3 1	100 100 100
Secondary (53 cases)	++ + +—	37 13 3	10 7 1	26.6 53.3 33.3	27 6 2	73.4 46.7 66.7
Tertiary (2 cases)	++ + +—	1 0 1	1 0 0	100 0 0	0 0 1	0 0 100
Latent (8 cases)	++ + +—	1 3 4	1 1 2	100 33.3 50	0 2 2	0 66.7 50
Total	++40 + 19 +— 9	68	23	33.3	45	66.7

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[1] Craig: The Influence of Treatment with Salvarsan on the Fixation Test of Syphilis, Bull. No. 3, Surgeon General's Office, June, 1913.

salvarsan; that the greatest number disappeared during the second week, even in the double plus cases, and that no less than twelve of the double plus cases became negative within one week after the administration of the drug."

Table 4 of this paper shows that 45 out of our 68 cases, or 66.7 per cent., were still positive after eight months of intensive mercurial treatment combined with neosalvarsan, no case receiving less than five injections of the neosalvarsan.

An analysis of Table 6 shows that all of our primary cases, regardless of the character of the serum reaction, remained positive. In the secondary cases, 37 showed a + + reaction, 73.4 per cent. of these cases have remained positive; 13 showed a + reaction, 46.7 per cent. of these have remained positive; 3 showed a + — reaction and 66.7 per cent. are still positive. Of the two tertiary cases, one became negative and the other remained positive. In the latent cases, the one + + reaction became negative, 66.7 per cent. of the + reactions remained positive, and 50 per cent. of the + — remained positive.

In practically all of the literature that has been reviewed on the subject of salvarsan, the authors are all agreed that their best results have been obtained in treating primary cases. According to the results quoted in Table 6, this has not been our experience with neosalvarsan; 100 per cent. of our primary cases still remain positive after five injections of neosalvarsan combined with intensive mercurial treatment.

Ehrlich has stated that "the observation of the Wassermann reaction represents the most valuable method we have of seeing clearly whether the syphilis is genuinely cured."

If this statement be correct — and it is believed that it cannot be disputed — then the results obtained from repeated Wassermann tests are bound to indicate the value of our treatment.

Repeated Wassermann tests have been performed in all of the sixty-eight cases here reported in our tables. The results of our treatment indicated by the Wassermann reactions do not seem so good as they should be; we do not believe they are as good as would have been obtained if salvarsan had been used instead of neosalvarsan. It has been stated by those of wide experience that at least three or four intravenous injections of salvarsan are necessary in order to cause the disappearance of the serum reaction in from 70 to 80 per cent. of patients. Only 33.2 per cent. of our cases became negative after five injections of neosalvarsan combined with intensive mercurial treatment. It seems to us, therefore, that, in order to bring our cases up to 70 or 80 per cent. of negative reactions, 8, 9 or even 10 injections of neosalvarsan will be necessary, and even then we believe it is doubtful if the neosalvarsan will show, even after ten injections, this high percentage of negative reactions.

In a personal interview with one of us (Haines) recently, Captain Craig of the Army Medical Corps, stated that he had been informed by a coworker of Ehrlich's that neosalvarsan was not coming up to the expectations of its discoverers and that it had been their experience that the treatment of syphilis with neosalvarsan was not showing as good results as with salvarsan as indicated by the results of the Wassermann tests.

The surgeon of the United States Military Prison, Fort Leavenworth, Kan., recently received an indorsement from the Commandant of the Army Medical School, Washington, D. C., which stated that they had been unable to find any literature on the comparison of neosalvarsan and salvarsan in relation to effect on the Wassermann reaction, based on a study of a definite number of cases, but there seems to be a general agreement among serologists and practitioners that neosalvarsan in proportionate doses, 3 to 2, does not affect the Wassermann as strongly as salvarsan when given in the usual way.

The results of our work do not seem to warrant the belief that neosalvarsan should be given in the proportion of 3 to 2 of salvarsan, but that it should be given either 6 or 8 to 2.

We have compared the results of Craig and Nichols with our own for the reason that we believe that theirs is the most exhaustive and comprehensive set of papers published of recent date on the serologic side of syphilis relative to its treatment with salvarsan. Further, the serum tests of all of our cases quoted in this paper, and those cases quoted in the papers we have used for comparison, were all performed by the same medical officer. A uniformity of technic has thus been established, and should increase the value of our statistics.

The rigid discipline maintained at this institution renders impossible any conduct which might in any way influence the Wassermann reaction. It must be borne in mind, however, in comparing the results obtained by Craig and Nichols with those obtained by us, that one and two injections of salvarsan were used by Craig and Nichols, whereas five injections of neosalvarsan have been given in all cases reported in this paper.

If it is our aim to "cure" cases and the "cure" is determined only by the serum tests, then we believe that the drug should be used which will reduce the positive serum reactions in the shortest possible time. It has been stated by many that neosalvarsan is a far safer drug to use than salvarsan. It is our belief that a large percentage of severe reactions following the administration of salvarsan were due to faulty technic. Freshly distilled water was not used in all cases, and other precautions, now always used, were omitted. Neosalvarsan is more easily prepared for administration by unskilled persons, but in the hands of those who are skilled in its use, salvarsan is quite as easily prepared.

In the military service the cost of the drug must be taken into consideration. The difference in the cost of salvarsan and neosalvarsan is very slight, yet if twice as much neosalvarsan must be used, it readily becomes the more expensive of the two to the government. This applies in no less degree to those who have occasion for its use in civil life.

CONCLUSIONS

After a careful analysis of the data which have been given in this paper, we believe that the following conclusions are warranted:

1. Five injections of neosalvarsan combined with intensive mercurial treatment, have failed to show as good curative results, as shown by the serum reactions, as did one dose of salvarsan.

2. In order to "cure" 70 or 80 per cent. of our cases it will be necessary to use four or five times as much neosalvarsan as salvarsan.

3. In view of the increased number of injections of neosalvarsan to bring about "cures" as stated in Conclusion 2, it becomes a far more expensive drug to use.

4. The drug should be used which will bring about the best results in the shortest possible time.

5. The complement fixation is of the greatest value in diagnosis, or as an indicator to the results of the treatment.

6. In all doubtful cases at least two or three Wassermann tests should be made before a diagnosis is decided on.

HEMOLYSIS DUE TO INTRAVENOUS INJECTION OF DISTILLED WATER *

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In the performance of a clinical test in which, to wash in a certain salt, the prescribed technic called for the intravenous injection of indefinite amounts of distilled water, it was found by a physician, who was trying the test on his own person before applying it to patients, that sufficient hemolysis was caused to produce chills, fever, considerable malaise, albuminuria and hemoglobinuria, lasting about four hours. It was afterward estimated that, as the individual weighed 84 kg. and as between 300 and 400 c.c. of water were injected in about fifteen minutes in addition to the relatively isotonic drug solution used, the amount of water introduced was equivalent to about 0.4 per cent. of the body-weight. As a search of the literature concerning hemolysis failed to reveal exact information as to the amounts of distilled water that may be injected intravenously without causing noticeable hemolysis, it seemed advisable to work out such quantitative estimations experimentally.

Here and there isolated observations have been recorded which indicate that large amounts of distilled water injected intravenously with considerable rapidity will cause hemolysis. For instance, Ilkewitsch[1] has found that in rabbits amounts of distilled water equivalent to 3 per cent. of the body-weight will cause death; but he was unable to find ill effects from smaller amounts equivalent to from 0.8 to 1 per cent. of the body-weight, and even recommends the injection of such amounts in the treatment of puerperal fever. In experiments on the effect of pancreatic extracts on glycosuria, Murlin and Kramer[2] noted an increased elimination of nitrogen after the intravenous injection of 150 c.c. of distilled water into a medium-sized dog, and thought this "probably due to hemolysis." In the older literature, the action of hypotonic salt solutions on the red blood-cells and tissues was exhaustively studied,[3] and it was known at least as early as the time of Johannes Mueller[4] that intravenous injection of water might cause hemolysis, but failed to do so if a certain proportion of salt was added to it. Nevertheless, when the practice of blood transfusion was first attempted, we find distilled water recommended[5] as a transfusion agent, in preference to physiologic saline solution or blood. Some of the leading physicians[6] of this country even recommended fresh cow's milk as the best transfusion fluid in the treatment of cholera, etc., until it was shown by Culcerq[7] that fat emboli might result. More recently there seems to be a tendency to disregard the dangers of the intravenous use of distilled water, as is shown in Ilkewitsch's recommendations in connection with puerperal fever, its use with salvarsan and elsewhere.

The following experiments, in which marked hemoglobinuria could be produced at will, show that the danger is a real one.

METHOD

To determine the toleration limit, varying amounts of distilled water, proportionate to the body-weight, were injected intravenously into dogs at known rates of speed. The amount of fluid and the rate were controlled by allowing the freshly distilled sterile water to flow from a buret, connected with positive air-pressure, into a small branch of the femoral vein. The first appearance of hemoglobinuria was noted in a bladder catheter, and its duration by repeated observation of the urine.

The presence of hemoglobinemia was determined by withdrawing at frequent intervals small amounts of blood by skin puncture into capillary tubes, which were promptly sealed at one end and centrifuged. This method uniformly gave a clear colorless serum before the experiment and permitted the accurate detection of small amounts of hemoglobin in the serum. From 300 to 500 c.c. of water were given by stomach-tube half an hour before the experiment, to ensure sufficient diuresis. In a few cases complete blood examinations were made before and after the experiment.

RESULTS OF INTRAVENOUS INJECTION OF DISTILLED WATER

Animal		Distilled Water Injected, c.c.	Body-Weight, Per Cent.	Results
Dog	1	100	1.6	Distinct hemoglobinemia.
Dog	1	100*	1.6	Distinct hemoglobinemia (i. e., no apparent decrease in resistance).
Dog	2	98	0.8	Slight hemoglobinemia (½ original amount).
Dog	3	224	3.2	Marked hemoglobinemia and hemoglobinuria (double amount).
Dog	3	224*	3.2	Marked hemoglobinemia and hemoglobinuria (no apparent increase in resistance).
Dog	4	160	2.1	M[illegible] albumin [illegible] original
Dog	2	350	2.6	Marked hemoglobinemia, albumin in urine.
Dog	7	182	3.1	Marked hemoglobinemia and hemoglobinuria.
Dog	7	138	2.3	Marked hemoglobinemia and hemoglobinuria.
Dog	7	250	4.0	Marked hemoglobinemia and hemoglobinuria.
Rabbit	9	35	2.5	Marked hemoglobinemia and hemoglobinuria.
Dog	12	184	1.9	Marked hemoglobinemia and slight hemoglobinuria.
Dog	15	35	0.4	No hemoglobinemia.
Dog	13	88	0.6	Slight hemoglobinemia (persisting less than 1 hour).
Dog	14	225	1.8	Marked hemoglobinemia; slight hemoglobinuria.

* Five days later.

RESULTS

In the first experiment (Dog 1) 100 c.c. (1.6 per cent. of body-weight) was arbitrarily chosen as relatively much greater than the estimated amount that caused hemoglobinuria in the human subject. At the same time a second dog (Dog 2) was given relatively one-half this amount (98 c.c., or 0.8 per cent.). The rate of injection in the two dogs was more rapid than in the man and yet, as may be seen in the accompanying table, both failed to produce more than a moderate amount of hemoglobinemia and no hemoglobinuria.

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* From the John Herr Musser Department of Research Medicine, University of Pennsylvania. Department of Medicine.

[1] Ilkewitsch, W. J.: Zentralbl. f. Gynäk., 1913, xxxvii, 1399.

[2] Murlin, J. R., and Kramer, B.: Jour. Biol. Chem., 1913, xv, 365.

[3] Hamburger: Osmotischer Druck und Ionenlehre, i, 360.

[4] Mueller, Johannes: Textbook of Physiology, Ed. 2, translated by W. Baly, 1840, i, 118.

[5] Netter: Gaz. d. hôp., 1879, No. 139, p. 1107.

[6] W. Pepper, J. W. Howe, T. Gaillard Thomas (quoted in Med. Rec., New York, 1883, xxiii, 434).

[7] Culcerq: Quoted in Med. Rec., New York, see Note 6.

Then, because in the human case the toxic symptoms had appeared only after a second injection, repeated after five days interval, the first experiment (100 c.c. dose) was repeated on the same dog after five days, but again without hemoglobinuria.

In the next dog a relatively double dose, 224 c.c. (3.2 per cent.), was given during fifteen minutes. Five minutes after the injection was stopped, the urine appearing in the catheter was still yellow and free from hemoglobin; eight minutes later it suddenly changed to a dark claret color, which persisted for more than four and less than sixteen hours. The same results were obtained by repeating the experiment five days later, tending to show that no relative increased or decreased resistance of the blood had thus far been developed. Subsequent experiments seemed to show that the toleration limit in dogs and rabbits was near 2.5 per cent. of body-weight, when the water was injected during a period of from five to fifteen minutes; but in two other experiments, designed to determine whether larger amounts might be given without hemoglobinuria if the injection extended over longer periods of time, bloody urine appeared when less than 2 per cent. of the body-weight had been introduced (once at the end of 13 minutes when 1.9 per cent. had been injected, and once after forty-five minutes when 1.8 per cent. had been injected). It appears, therefore, that considerable individual variation exists, for in contrast to these results we have two earlier experiments in which 2.1 per cent. and 2.6 per cent. failed to give hemoglobinuria.

It was found that much smaller amounts of distilled water would give a transient though distinct hemoglobinemia, without hemoglobinuria. In Dog 2, above mentioned, 0.8 per cent. of body-weight of distilled water sufficed to give a distinct hemoglobinemia by the method described, although before the experiment, as in every case, the serum was absolutely clear. Experiments on Dogs 13 and 15 showed that (disregarding individual idiosyncrasy) the limit at which noticeable hemoglobinemia appear was between 0.4 and 0.6 per cent. of body-weight.

In the few blood examinations made, no anemia was noted, the only change being a decrease in the resistance of the red cells (especially in minimal resistance: that is, some hemolysis occurred in relatively stronger hypotonic salt solution). For instance, with Dog 7, whereas before the injection, complete hemolysis occurred in 0.4 per cent. sodium chlorid; partial in from 0.425 to 0.5 per cent., and no hemolysis at 0.525 per cent., one hour after injection of distilled water, complete hemolysis occurred at 0.425 per cent.; partial at from 0.45 to 0.55, and none at 0.6 per cent. These changes were still present after twenty-four hours.

The same toleration limit for hemoglobinuria, roughly speaking, was found to exist for the rabbit. Another experiment showed that, contrary to Ilkewitsch's statement, as much as 8 per cent. of body-weight might not cause death.

A consideration of the results of these experiments shows that although amounts of distilled water necessary to produce hemoglobinuria in the dog are larger than are apt to be used clinically (2.5 per cent. of 80 kg. being 2 liters), nevertheless the smaller amounts produce an undesirable hemoglobinemia. Also other factors, as lowered resistance or individual idiosyncrasy, might with even smaller amounts produce bad results. Furthermore, although these experiments show fairly definite levels for the appearance of hemoglobinuria in dogs, it may well be that in man, as in the case above mentioned, these levels are considerably lower.

On account of the constantly growing number of diagnostic and therapeutic measures in which intravenous infusion is used, it is therefore important that clinicians should bear in mind the possibility of causing hemoglobinemia or hemoglobinuria by the use of fluids which are not rendered isotonic by the addition of the particular salt used.

CONCLUSIONS

1. Rapid intravenous injection of distilled water, in amounts equal to from 2 to 3 per cent. of the body-weight or more, will cause in the dog transient hemoglobinuria and albuminuria.
2. Lengthening the duration of injection time from five to forty-five minutes is without noticeable effect, though a much slower injection might give different results.
3. Hemoglobin-stained urine usually appears in the bladder catheter in from twenty-five to thirty minutes after the beginning of the injection. The hemoglobinuria lasts approximately from four to sixteen hours, depending on the severity of hemolysis.
4. Much smaller amounts (as low as from 0.4 to 0.6 per cent.) are sufficient to cause a noticeable hemoglobinemia without hemoglobinuria.
5. Hemoglobinemia appears within from two to four minutes after the beginning of the injection and may last twenty-four hours.
6. In doses that just fail to cause hemoglobinuria, albumin and bile may appear in the urine the next day.
7. No noticeable anemia is caused, but there is a temporary decrease in the minimal resistance of the red blood-cells.

Chestnut Hill.

BLOOD TRANSFUSION

REPORT OF ONE HUNDRED AND THIRTY-FIVE TRANSFUSIONS BY THE SYRINGE-CANNULA SYSTEM*

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The purpose of this paper is to report some of the results of blood transfusion by the syringe-cannula system, in the cases referred to me from time to time. Limitations of space will not permit of a thesis on the scientific aspects of the subject and the many corelated problems, a discussion of the numerous theoretical considerations involved, or full case-reports and blood and hemoglobin records. These are reserved for a later publication.

The cases transfused vary considerably and include the diseases enumerated in Table 1. The ages of the patients are given in Table 2.

In no case was there thrombosis, embolism or sepsis; in no case was a skin incision made; in no case was anesthesia given; in no case was death due to any untoward effects of transfusion.

Post-mortem examinations were made in two cases several weeks after transfusion. Veins punctured were examined by Dr. Charles Norris, director of laboratories of Bellevue and Allied Hospitals, who could find no evidence of the puncture. These venous puncture-wounds heal by first intention, and no thrombosis occurs at the site of puncture.

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* Read before the Clinical Congress of Surgeons of North America, Nov. 11, 1913

CANNULA INSERTIONS

In the total number of transfusions there were over 243 cannula insertions into veins, a summary of which is given in Table 3.

TABLE 1.—DISEASES IN WHICH BLOOD WAS TRANSFUSED

Diseases	No. of Cases	No. of Transfusions in Each Case	Unimproved
Pernicious anemia (total of 19 cases).	8	1	4
	6	2	3
	2	3	1
	2	4	0
	1	6	0
Aplastic anemia	2	3	2
Splenic anemia with hematemesis	1	5	0
	1	1	0
Anemia (unknown cause)	1	3	0
	2	1	0
Chlorosis	1	1	0
Hemophilia	1	3	0
Hemophilia	1	1	0
Purpura hemorrhagica	1	1	0
	1	2	1
Hemorrhage	4	1	0
Typhoid with hemorrhage (extreme)	2	1	1
Typhoid with hemorrhage (extreme)	1	2	1
Gastric ulcer with hemorrhage	4	1	1
	2	2	0
Gastric ulcer with peritonitis	1	1	1
Hemorrhoids and secondary anemia	2	1	0
Carcinoma	1	2	0
Sarcoma	1	1	1
Diphtheria, septic petechiae	1	1	1
Tonsillitis with petechiae and anemia.	1	2	0
	2	1	2
	4	1	3
	1	2	0
Chronic endocarditis	2	1	0
Sepsis	5	1	1
	1	6	0
Typhoid (septic type)	2	1	2
Postoperative nephrectomy	1	1	0
Postoperative cholecystotomy and hemorrhage	1	3	0
Cirrhosis of liver and secondary anemia	1	1	0
Still's disease with anemia	1	2	0
Acute intestinal intoxication	1	1	1
Malnutrition	9	1	4
Acute lymphatic leukemia	1	1	1
Acute destructive myeloid type of leukemia with pernicious anemia	1	1	1

TABLE 2.—AGES

Ages	No. of Cases	Ages	No. of Cases
Under 6 months	7	From 20 to 30 years	12
From 6 to 12 months	6	From 30 to 40 years	12
From 1 to 2 years	4	From 40 to 50 years	7
From 2 to 5 years	4	From 50 to 60 years	6
From 5 to 10 years	4	From 60 to 70 years	5
From 10 to 20 years	12	From 70 to 80 years	1

The youngest patient transfused was 6 weeks old: weight 6 pounds, 6 ounces. The oldest patient transfused was 73 years old.

TABLE 3.—CANNULA INSERTIONS INTO VEINS

No. of Insertions	Puncture on Which Vein was Entered
MEDIAN BASILIC VEIN	
208	First
7	Second
1	Third
2	Fourth
EXTERNAL JUGULAR VEIN	
15	First
9	Second
1	Fourth

In one case six transfusions were performed at different intervals of time, using the same vein through the same skin-puncture in each operation. Donor McM. was used for eight transfusions at different intervals of time; the cannula was inserted into the same vein through the same skin-puncture on each occasion.

I have described the technic of the work in a previous article.[1]

QUANTITY OR DOSAGE

Judgment of the amount of blood to be transfused will depend on the size, weight, age, physical condition of the patient, the type of disease to be treated, the object to be gained by transfusion, the presence of other complications, and, lastly, experience. The largest amount I have transfused into one person in one sitting is 2,000 c.c. This quantity was taken from two donors.

DONORS

The quantity of blood that can be drawn from a donor varies. The largest quantity I have taken from one person in one sitting is 1,400 c.c. This man was 5 feet 8 inches in height and weighed 170 pounds. I have frequently taken from 900 to 1,000 c.c. in one sitting, as shown in Table 4.

TABLE 4.—QUANTITIES OF BLOOD TAKEN FROM SOME OF THE DONORS IN A GIVEN LENGTH OF TIME AND NUMBER OF SITTINGS

Donor	Quantity, c.c.	Number of Sittings	Number of Days
T.	1,200	2	5
J.	2,000	3	5
Sister	1,560	3	6
S.	2,240	2	7
Husband	1,660	2	9
McE.	2,650	3	18
M.	1,500	2	14
Father	1,660	6	41
S.	1,150	1	1
J.	1,550	2	7
McM.	3,000	8	150
McG.	2,150	5	42
C.	2,080	5	28
A. C.	2,340	3	21
W. C.	1,000	2	14
Brother	820	1	1
D.	1,800	2	120
D.	1,260	1	1
J.	2,160	3	6
Mother	2,000	2	3
G.	1,600	2	6
Brother	1,200	1	1
Wife	900	1	1

If the case is not one of infectious disease, two-thirds of the amount of blood drawn from the donor is replaced with normal saline solution through the cannula with which the transfusion is performed. When infection is present the same cannula is not used.

TABLE 5.—REACTION TO TRANSFUSION

Donor	Transfusions	Chills	Temperature
Father	17	1	1 case, 104. 1 case, 104.8. 1 case, 101. 2 cases. Increase of 2.
Mother	15	*	1 case, 100.2. 1 case, 100. 1 case, 104.
Brother	7	1	1 case, 102. 1 case, 104.
Sister	4	†1	1 case, 102.
Grandfather	1	*	No rise.
Aunt	1	*	No rise.
Son	1	1	102.
Allen	62	22	4 cases, 104-105. 10 cases, 102-104. 12 cases, 100-102. 6 cases, 99-100. 30 cases. No rise.

* None. † Slight.

The recuperative power of a healthy donor is quite remarkable. My records on this phase of the subject are still too meager for publication, but from observations thus far made I am convinced that the recuperative power is greater after the first transfusion and gradually less rapid in the succeeding transfusions. Furthermore, after successive bleedings, while the blood-picture may be normal, there may be a little loss of tissue-weight. The loss of weight in all probability is a compensatory process. I hope at a later date to submit a series of observations now being made on this subject.

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[1] Lindeman, Edward: Simple Syringe Transfusion with Special Cannulas, Am. Jour. Dis. Child., July, 1913, p. 28.

If at any time the blood-pressure in the donor should fall so that blood is withdrawn with great difficulty, it is an indication that no more blood can be spared at that time. This it will be found will vary; and when there is considerable psychic disturbance the pressure will fall more readily.

REACTION TO TRANSFUSION

It is quite obvious from Table 5 that the reaction from a blood relative in most instances is less than from an alien; yet the blood of many aliens may be fully as congenial as family blood. Of sixty-two transfusions in which alien blood was used chills occurred in twenty-two instances, and a rise of temperature in twenty-six. Hence, practically in 50 per cent. of the cases in which alien blood was used the mixture proved as good as family blood. In the remaining 50 per cent. of the cases no untoward effects occurred in any but three cases, save the chill and temperature reactions; but in three cases hemolysis occurred from which patients recovered. (It should be borne in mind, however, that hemolysis can occur with family blood.)

TABLE 6.—RECORDS OF TEN CASES OF TRANSFUSION

Case No.	Age, Yrs.	Sex*	Diagnosis	Date of Transfusion	Quantity Transfused	Blood		Remarks
1	16	♀	Anemia; cause unknown.	4/22 4/27 5 /7	500 750 500	4/21 R. B. C., 1,400,000 Hb., 15 per cent.	5/12 5,700,000 55 per cent.	12/1. Condition excellent.
2	40	♂	Hemorrhage; traumatic.	5 /4	1,200			Complete recovery. Discharged from hospital in two weeks.
3	34	♂	Gastric ulcer with hemorrhage.	7/15	820	7/14 R. B. C., 2,332,000 Hb., 43 per cent.	7/24 4,096,000 65 per cent.	Operation after transfusion. Discharged cured on 35th day.
4	34	♀	Postoperative nephrectomy.	8/ 7	1,000	8/ 5 R. B. C., 2,960,000 Hb., 50 per cent.	8/ 8 5,600,000 80 per cent.	8/28. Discharged cured.
5	34	♀	Cirrhosis of liver..	8/26	960	8/25 R. B. C., 1,448,000 Hb., 16 per cent.	9/26 4,090,000 77 per cent.	Much improved.
6	34	♀	Pernicious anemia..	9/12 9/21	760 900	9/11 R. B. C., 900,000 Hb., 25 per cent.	10/20 4,000,000 75 per cent.	11/1. Discharged much improved.
7	29	♀	Post-partum hemorrhage and sepsis.	8/31	1,320.	8/28 R. B. C., 1,000,000 Hb., 20 per cent.	9/11 2,448,000 64 per cent.	10/10. Patient reports to-day. Health excellent. Cured.
8	3	♂	Anemia; cause unknown.	9/18	250	9/16 R. B. C., 3,008,000 Hb., 40 per cent.	9/23 4,600,000 71 per cent.	9/26. Discharged from hospital. Condition excellent.
9	47	♂	Gastric Hemorr.; pleurisy with effusion; consolidation rt. lower base.	12/23 1/ 2	800 800	12/22 R. B. C., 1,780,000 Hb., 26 per cent.	1/ 9 3,200,000 70 per cent.	1/15. Patient goes out daily. Cured.
10	28	♀	Gastric ulcer; hemorrhage.	7/26 8/21	600 600	7/25 R. B. C., 950,000	8/29 5,760,000	8/31. Discharged from hospital. Cured.

* In this column ♂ denotes male and ♀ female.

Providing the same donor be used, there is frequently no reaction after the second and succeeding transfusions; and if any reaction occurs it is usually very mild.

A given donor of alien blood will cause a chill and a fever in one patient and none in another, though the transfusions be done on the same day and both patients have the same disease and the same quantity of blood be given.

The chill and temperature reactions may be associated with a slight degree of hemolysis incident to serum reaction. I have occasionally observed such hemolysis in a few cases evident only by a slight jaundice-tint disappearing within twenty-four hours. In such cases in the succeeding transfusions, the same donor being used, this tint is less or absent.

BLOOD-TESTS

It is customary before transfusion to make preliminary blood-tests, namely, the Wassermann, hemolytic and agglutinin tests. The question I am constantly asked is whether these tests are reliable and really worth while. I think that some who have had an experience in only a few cases are liable to disregard them or attach little importance to them, the few cases probably not including a pair of incompatible serums.

My view has always been that unless the serologic report is respected, even when slight reactions are obtained, it is useless to perform the tests. Laboratory work, unless done well, is worthless. It should be remembered, however, that laboratory methods have their limitations even when done well, and only by constant vigilance can untoward effects be avoided.

In one case the laboratory reported hemolytic tests as negative, but a hemolysis was detected clinically when the patient had received 75 c.c. The transfusion was immediately discontinued. The reaction was only slight and the patient recovered. The hemolytic tests were again made by another serologist who reported as follows:

Recipient cells + donor serum = no hemolysis.
Donor cells + recipient serum = slight hemolysis.
Control, no hemolysis.

In a second case, in the first transfusion there was no hemolysis and the tests were negative. In the second transfusion, five days following, the same donor was used; hence no preliminary tests were made. A hemolysis occurred; the patient showed a characteristic reaction clinically and hemoglobin appeared in the urine. Hemolytic tests were then made which showed hemolysis of donor's cells by patient's serum. The patient recovered.

In a third case the hemolytic tests were reported as negative, yet the patient hemolyzed the donor's corpuscles. Opportunity was not afforded to check up the accuracy of the laboratory work; therefore, judgment in this case must be suspended. This patient also recovered.

In the large number of donors tested a certain number of incompatibilities were discovered, and these were eliminated. Only once did the laboratory fail, namely, in the case just cited.

In the actual performance of the work I introduce a small quantity of blood and then pause for a short period of time before continuing transfusion. Opportunity is thus offered for observing the compatibility of the blood introduced. Should an undesirable reaction ever occur indicative of incompatibility, transfusion is discontinued; no harm is done and another donor is procured. Herein lies a factor of safety in this method which is of not a little importance.

The following case-report may illustrate, in a measure, how the method may be applied, and Table 6, containing the records of a few of the cases transfused, speaks for the value of the method.

There is little necessity for me to discuss the results, as "one who runs, sees."

REPORT OF CASE

D. V., man, aged 21, was admitted to the service of Dr. Frank S. Meara, Second Medical Division, Bellevue Hospital, April 16, 1913, with splenic anemia (large spleen with hemorrhages from bowel and stomach). The Wassermann reaction was positive.

November 18: Splenectomy was performed by Dr. John A. Hartwell. At operation the liver was found nodular. According to the pathologic report of the spleen there were chronic interstitial splenitis and chronic passive congestion.

April 18: Coagulation-time, twelve minutes.

April 19: From Donor T., 500 c.c. of blood were transfused into the median basilic vein. There were no chills and no rise in temperature after transfusion.

	April 17	April 20	April 22
R. B. C.	1,700,000	2,400,000	1,800,000
Hb.	20 per cent.		

April 23: Second transfusion; 700 c.c. of blood were transfused from Donor T.

	April 24	April 26
R. B. C.	2,300,000	1,664,000

There were no chills and no rise of temperature after transfusion.

April 24: Coagulation-time, ten minutes.

April 26: Third transfusion; 750 c.c. of blood were transfused from Donor J. There were no chills and no rise in temperature after transfusion.

April 28: R. B. C., 2,550,000; coagulation-time, 6 minutes.

May 1: R. B. C., 1,992,000; coagulation-time, 6 minutes. Wassermann reaction on all donors negative.

Note: May 1, patient's disease seemed to destroy the blood-elements; but transfusion made him stronger, decreased the coagulation-time, and all hemorrhages by bowel ceased.

May 5: Wassermann reaction positive.

May 10: Neosalvarsan, 0.45 gm.

May 12: Mercuric salicylate biweekly.

May 19: Neosalvarsan, 0.9 gm.

May 28: Neosalvarsan, 0.45 gm.

June 22: R. B. C., 4,312,000; Hb., 65 per cent. Patient was discharged from hospital, improved; the size of the spleen was unchanged.

October 1: Patient was again admitted to the hospital on account of hemorrhage.

October 12: R. B. C., 4,496,000; Hb., 75 per cent.

October 21: Patient vomited half a basin of blood and passed blood by bowel.

October 27: Fourth transfusion; 740 c.c. of blood were transfused from Donor W. C.

	Before transfusion	After transfusion
R. B. C.	1,664,000	2,352,000
Hb.	18 per cent.	29 per cent.

There was a rise in temperature to 104 after transfusion and a decline to normal next day. There were no chills.

November 10: Fifth transfusion; 930 c.c. of blood were transfused from Donor A. C. (brother of Donor used October 27).

	November 8	November 10
R. B. C.	2,400,000	3,700,000
Hb.	34 per cent.	39 per cent.

There were no chills and no rise of temperature after transfusion.

November 12: R. B. C., 4,080,000; Hb., 45 per cent.

November 18: Splenectomy was performed by Dr. John A. Hartwell. The sixth transfusion was performed during this operation; 220 c.c. of blood were transfused from Donor W. C., who was used October 27. This transfusion was done while spleen was being removed in order to replace the loss of blood incident to operation.

November 24: R. B. C., 5,000,000; Hb., 85 per cent.

December 1: Condition good.

January 21: Discharged from hospital apparently well. An interesting feature of this case is the ability of patient to retain the blood transfused after receiving antisyphilitic treatment and his inability to retain it before this treatment.

Not only is blood transfusion a matter requiring skill, but problems in pathology, physiology, serology, immunity, chemistry and clinical medicine also constantly arise that require special study. Every large hospital in which such work is done should have on the attending staff a hematologist who can give to such work the degree of specialization necessary to meet the many problems and direct the work; thus accidents in the work will be eliminated, a waste of good blood may be prevented and applications seen that might otherwise be overlooked.

This subject has interested medical science and has thrilled the imagination of man ever since Harvey's discovery of the circulation of the blood. In the last quarter of a century some of these dreams have been realized. The difficulties of technic of the old method, the uncertainty of success, the pain, infection and lifelong scars to patients and donors, the empiricism of its therapeutics relegated its use to the court of last resort. This method makes possible new applications. It opens a new field of therapeutics — a field that will possibly solve some of the present insoluble enigmas in the treatment of disease and in the conservation of human life.

40 East Forty-First Street.

BLOOD TRANSFUSION IN DIABETES MELLITUS*

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AND

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INTRODUCTION

If about one-fifth of the pancreas of a dog with its artery and vein be properly implanted under the skin of the abdomen, the graft will live. Later, the remaining four-fifths of the gland may be extirpated *in toto* without causing more than a transient glycosuria, the graft serving to prevent an outspoken diabetes. If after the animal has recovered from the second operation the encapsulated rest be enucleated, severe diabetes supervenes. On the other hand, the blood of depancreatized animals has not been found to possess positive diabetogenous powers. This experiment embodies the chief supports for the conception that the pancreas elaborates a "something" whose presence in the body is in some way necessary for the normal utilization of sugar. It is generally assumed that this "something" (internal secretion) leaves the pancreas by way of the blood-stream, that is, through the pancreaticoduodenal and pancreatic veins.

Numerous attempts have been made to demonstrate directly its existence in the blood (or in extracts made from the pancreas), but until now these attempts have failed or have only produced results the significance of which is fairly open to question.

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* From the Otho S. A. Sprague Memorial Institute Laboratory of Clinical Research, Rush Medical College.

Lépine[1] depancreatized dogs and transfused them with large quantities of normal blood. He observed a decrease of the glycosuria with no decrease of the hyperglycemia.

Hess[2] first transferred blood from a depancreatized animal into a normal animal, and then reversing the process, asserts that he obtained an amelioration of the glycosuria.

Forsbach[3] joined two pups of the same litter in such a way that free intermingling of their bloods occurred, as demonstrated by the passage of iodin from one animal to the other. After one of the animals was depancreatized, only a slight glycosuria developed during the brief remainder of its life. Some glycosuria, however, occurred in the mate.

Alexander and Ehrmann,[4] for reasons that are apparent, drew blood directly from the pancreaticoduodenal vein of a healthy dog and injected it into a diabetic dog, but with negative results.

A long series of transfusion experiments was carried out by Hédon.[5] He established vascular anastomoses between diabetic and normal dogs in a variety of ways, prolonging the transfusion in some cases for as long as eight hours. During the actual transfusion there was frequently, but not always, a decrease of the glycosuria, the most pronounced effects having been reported in those instances in which the blood of the splenic vein of the normal dog was carried directly into the portal circuit of the diabetic dog. As in Forsbach's experiment, Hédon also depancreatized one animal after the cross circulation had become established, and failed to observe a glycosuria of the grade usually seen after this operation. Hédon frequently saw toxic symptoms as evidenced by fever, albuminuria and prostration ending in death.

More recently Drennan[6] has injected fresh defibrinated normal blood into the systemic veins of diabetic dogs and observed falls of the glycosuria immediately after the injections, but saw no like effect when blood was used that had stood for some hours. Carlson and Drennan[7] also report that pancreatectomy performed on pregnant dogs near term fails to produce the usual diabetes, but that after delivery of the fetuses, severe symptoms promptly begin, from which they conclude that the blood from the healthy fetuses carrying the pancreatic internal secretion enters the body of the mother and there prevents the development of diabetes.

Very recently, Kramer and Murlin[8] have studied the effects of injecting normal blood and pancreas extracts (made according to Starling) into diabetic dogs, with particular reference to the respiratory quotient. They found no rise in the respiratory quotient, but did observe a temporary fall in the intensity of the glycosuria following a large transfusion. This fall, however, was succeeded by a corresponding rise, and seemed most simply explainable on the basis of a mere retention.

These experiments fall into three groups:

1. Experiments in which normal blood has been transfused or injected into a diabetic dog without establishing a return circulation and in which a temporary depression of the glycosuria has been used as the sole index of an increased utilization of sugar. Against all of these the criticism can be raised that the intensitv of a glycosuria alone is no adequate criterion of the influence of the procedure on the disease. This is particularly true when the constancy of the glycosuria before and after the transfusion or injection was not established. Simple retentions would account for a diminished sugar excretion, and there are grounds for believing that in experiments of this kind the action of the kidneys is not infrequently affected.

2. Experiments (like the parabiosis procedure of Forsbach, the pregnant-dog experiment of Carlson and Drennan, and certain of the anastomosis experiments of Hédon), in which cross circulations between two normal animals, or interchange between fetuses and mother, existed, and in which pancreatectomy in one of the animals (or the mother) was not followed by glycosuria of the grade which would be expected were it not for the intermingling of blood elements, but in which fluctuations of the glycosuria were used as the only index of the diabetic condition. These experiments are *a priori* susceptible of two interpretations. An internal secretion passes from the healthy into the diabetic animal, there to provide for the utilization of sugar, or the depancreatized dog actually becomes diabetic while the unutilized sugar and the other diabetic metabolites accumulating in the blood pass over into the body of the fetus or mate and are there utilized, thus preventing the diabetes of the depancreatized animal from manifesting itself in the ordinary way. Lusk[9] and his pupils (Fisher and Wishart[10]) have brought evidence strongly "favoring 'the older view' of Carl Voit — that the presence of abundant food increased the power of the cells to metabolize."

3. Experiments like those under Class 1, but differing from them in that the glycosuria was not made the only index of results. Thus Lépine determined the sugar-content in the blood of the diabetic animal, while Kramer and Murlin observed the respiratory quotient. Experiments of this type have failed to show that the lessening of glycosuria is accompanied by a fall of hyperglycemia or a rise of the respiratory quotient.

Notwithstanding the fact that the results of experiments of Types 1 and 2 are open to more than one explanation, it is also true that the correctness of the hormonic interpretation cannot be summarily dismissed. Moreover, if correct, practical applications might be made; that is, clinical blood transfusion might have a beneficial effect, which, even if temporary, would serve to tide a diabetic patient past a prematurely impending coma or over a temporary crisis such as that presented by an acute illness, a necessary surgical operation, or the like. Theoretically, it is a question of considerable physiologic importance. With these considerations in view, we have long had it in mind that when the stage of diabetes is reached in which intravenous therapy is ordinarily practiced, it might be well to try the effect of substituting fresh blood for sugar solution or alkali. We therefore made a transfusion of blood into the veins of a patient suffering from diabetes mellitus, one for whom all known expedients had been exhausted and who was approaching the end. We took such precautions as are necessarv to learn definitely the effects of such treatment.

REPORT OF CASE

History.—The patient, a man, aged 34, had first shown symptoms of diabetes six years previously. Except for the diabetes he had had no illness of note. The Wassermann reaction in the blood was negative. He had no evidence of pancreatic disease affecting the digestive function. There was no history of diabetes, obesity, goiter, or other so-called "ductless gland" disease in other members of the family, either

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1. Lépine: Le diabète sucré, 1909, p. 363.
2. Hess: München. med. Wchnschr., 1902, p. 1449.
3. Forsbach: Arch. f. exper. Path. u. Pharmakol., 1908, lx, 131.
4. Alexander and Ehrmann: Ztschr. f. exper. Path. u. Therap., 1908, v, 367.
5. Hédon: Compt. rend. Soc. de Biol., 1909, lx, 621; lxvi, 699; lxvii, 792; Arch. Internat. de physiol., 1910, p. 192; Rev. de Méd., 1910, xxx, 617.
6. Drennan: Am. Jour. Physiol., 1911, xxviii, 396.
7. Carlson and Drennan: Am. Jour. Physiol., 1911, xxviii, 397
8. Kramer and Murlin: Jour. Biol. Chem., 1913, xv, 365.
9. Lusk: Jour. Biol. Chem., 1912, xiii, 27.
10. Fisher and Wishart: Jour. Biol. Chem., 1912, xiii, 49.

in his generation or that of his parents or grandparents. For two years the symptoms had been severe and for eighteen months prior to the transfusion he had been constantly under observation in the Presbyterian Hospital, Chicago, where on numerous occasions his metabolism had been studied for prolonged periods. Prior to entering he had twice become unconscious with what had been diagnosed as diabetic coma, and on several occasions afterward coma was averted only by the enforcement of complete bodily rest and the use of maximum amounts of alkali and wine. He became fully educated with regard to the requirements of a metabolism study and voluntarily cooperated in a highly intelligent way. He knew that the expectancy of life was very limited and solicited the trying of any new line that might even temporarily mitigate his condition or delay the end. On several occasions his glucose to nitrogen ratio (G:N) closely approximated 3.65:1 on a diet aggregating 2,500 calories (due allowance having been made for ingested carbohydrate). Nevertheless his urine could always be rendered sugar-free by fasting and on semi-starvation[11] could be reduced from 100 or thereabouts to the neighborhood of 50, as it was on the diet used at the time of transfusion. During the time of observation the patient remained quietly in bed.

URINALYSIS PRECEDING AND FOLLOWING TRANSFUSION

The periods are of twenty-four hours each, ending daily at 7 a. m. At 4:15 p. m., November 14, the transfusion was begun; that is, after ten hours of the period had elapsed. The volume of blood transfused was 500 c.c., containing 15.6 gm. nitrogen (corresponding to 97.6 gm. protein).

Date	Urine, c.c.	Specific Gravity	Glucose, gm.	Ammonium gm.	Acetone and Beta-keto Butyric Acid gm.	Beta-Hydroxy-Butyric Acid gm.	Nitrogen, gm.
9/ 9	1746	1022	22.9	1.49	5.48	36.8	5.5
9/10	1830	1021	26.3	1.28	5.78	39.7	5.8
9/11	1582	1025	29.6	1.80	4.04	35.9	4.0
9/12	1495	1024	29.0	1.17	5.49	38.9	5.5
9/13	1845	1022	24.3	1.80*	5.90	39.1	5.9
****							
9/14	2117	1025	47.6	1.80	6.99	46.6	7.0
9/15	2195	1021	43.9	2.67	9.08	46.8	9.0
9/16	2000	1027	62.2	3.00	7.70	40.6	7.7
9/17	2055	1028	53.2	3.32	7.64	44.4	7.6
9/18	1565	1031	37.2	2.89	6.30	32.6	6.4

*Estimated. **** Transfusion.

AGGREATES FOR FIVE DAYS PRECEDING AND FOLLOWING TRANSFUSION

Days	Glucose	Nitrogen	Glucose Nitrogen Ratio	Q	Acetone Bodies†
9, 10, 11, 12, 13	132.1	26.7	...	51.4	190.4
14, 15, 16, 17, 18	**244.1**	**37.7**	**2.1**	**63.9**	**273.6**
INCREASE	112.0	11.0	...	12.5	83.2

† Reckoned as beta-hydroxybutyric acid.

Diet.—For two weeks prior to the transfusion and for five days afterward the diet consisted of 800 c.c. of 16 per cent. cream, three eggs (150 gm.), and water, clear tea or coffee to make the total volume of fluid 2 liters (about 2 quarts) daily. The diet was closely watched by patient, nurses and intern, in addition to ourselves. As already stated the patient had always proved trustworthy. The same care was exercised in the collection of excreta.

Donor.—A brother two years older than the patient, a man in robust health and well developed, furnished the blood. He had had no severe illnesses and was free from physical or serologic evidence of lues. His serum had no agglutinative or lytic effect on the patient's corpuscles, and his corpuscles were not laked or agglutinated by the serum of the former. The serologic work was done by Dr. Russel Wilder, to whom our thanks are here expressed.

Transfusion.—This was painlessly performed under novocain by Drs. Arthur Curtis and V. C. David, using a method developed by them[12] by means of which it is possible to transfuse measured volumes of blood. The operation was unattended by visible signs of shock. Blood was taken from the left median cephalic vein and introduced into the corresponding vein in the right arm of the patient. The volume transfused was 500 c.c. Total nitrogen by Kjeldahl, 15.6 gm., corresponding to 97.6 gm. protein (19.5 per cent.).

Results.—The accompanying chart shows the figures obtained from the day the excretions became constant to the end of the experiment when the diet was altered in order to reduce the acidosis. Two weeks after the operation the patient was no worse than he had been on other occasions. A stitch abscess appeared at the site of operation, but ultimately healed. The patient finally died in typical "dyspneic coma."

COMMENT

In the five days prior to the transfusion the patient excreted 132.1 gm. glucose as against 244.1 gm. for the five days following—a difference for five days of 112 gm. The maximum quantity of sugar derivable from the protein and sugar of the perfused blood was 3.65 × 15.6 + 0.5, or 57.4 gm., provided all the protein were broken down as it is in the severest diabetes. This would account for less than half the extra sugar which appeared during the second five days.

Although 15.6 gm. of nitrogen were introduced, the aggregate increase in nitrogen for the five days following the transfusion was 11 gm. This is explainable by the facts that the patient had been in a nitrogen deficit for ten days before the transfusion and that the nitrogen in the urine was still above that of the diet when observations were stopped. The ammonium, acetone bodies and diabetic quotient all rose. In short, the diabetes was rendered more severe in every respect. There is no evidence that an increase in the utilization of sugar actually occurred, and was simply masked by the increased quantity of sugar from the protein administered.

When these results are taken in conjunction with the findings of Lépine, Alexander and Ehrmann, Kramer and Murlin, and with recognition of the criticisms which have been made of conclusions drawn from the types of experiments in Classes 1 and 2, and when it is recalled that as yet there has been no convincing evidence that extracts made from the pancreas have had the power to increase the utilization of sugar by diabetic muscles or of diabetic animals as a whole, some reasonable question arises as to whether or not the conception of a blood-borne internal secretion from the pancreas which operates in the tissues and there makes possible a normal utilization of sugar, is capable of substantia-

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[11] Q, the quotient which represents the severity of a case of diabetes is 100 when the diabetes is "complete," all fed carbohydrate and all sugar formed from protein appearing in the urine as glucose. This quotient, used by Falta and modified by Lusk, enables one to classify diabetes cases from 0, no glycosuria, to 100, maximal severity. As here used:

$$Q = \frac{\text{Grams glucose in urine} \times 100}{(\text{Grams N in urine} \times 3.65) + \text{grams carbohydrate ingested.}}$$

To compare the severity of one case with that of another Q must be reckoned on the same diet for both cases.

[12] Curtis, Arthur H., and David, V. C.: The Transfusion of Blood, The Journal A. M. A., Oct. 28, 1911, p. 1453.

tion. The theory advanced by Hédon and others should be reckoned with, that the active principle elaborated by the pancreas may operate only in the pancreas or immediately after leaving it and on coming in contact with the venous blood returning from the intestine.

CONCLUSIONS

The transfusion of 500 c.c. of peripheral venous blood from a healthy male donor into the peripheral veins of a brother suffering from severe diabetes mellitus had a decided effect on the metabolism of the latter, as evidenced by a marked rise in the output of sugar, ammonium, and acetone bodies, and an increase of the glucose to nitrogen ratio. In severe diabetes mellitus blood transfusion is definitely contra-indicated.

FIXATION OF THE PTOSIC STOMACH AND COLON BY RETROPERITONEAL IMPLANTATION

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The procedure for the fixation of the displaced or ptosic stomach and colon, as successfully practiced by me during the last five years, is as follows:

FIRST HALF

This consists in the exploration of the lower zone of the abdomen.

1. (*a*) In cases in which no redundancy of the sigmoid is either demonstrated by roentgenoscopy or is not suspected from the clinical conditions, a vertical incision about 8 cm. in length is made in the middle line.

b. In cases in which the redundant sigmoid has been demonstrated by roentgenoscopy, or in which it can be predicated on the symptoms, the abdomen is opened by the Pfannenstiel incision, across both recti, about 1 inch above the symphysis.

2. The alimentary canal is explored, beginning preferably with the cecum, and following out the course of the ileum.

3. All adhesions that may be encountered, are broken up.

4. The vermiform appendix, whether it is actively diseased or not, is removed.

5. If the sigmoid is redundant, it is fixed to the abdominal wall by stitching the proximal layer of the mesosigmoid to the parietal peritoneum. A continuous suture of silk, tightly drawn, is best employed for the purpose, care being taken not to wound either the blood-vessels or the chyle-ducts in the mesosigmoid.

6. This incision is left unsutured for the present, the peritoneal margins being held together by hemostatics, until after the second half of the operation has been completed, when closure is effected by the laminated suture.

SECOND HALF

This consists in the fixation of the ptosic colon, and, when necessary, the stomach, as nearly as possible in the natural position.

1. The upper zone of the abdomen is opened by oblique incision about 8 cm. in length, extending along the right costal margin upward and inward to a point corresponding to the second costal cartilage, and thence directly across both recti muscles to a point corresponding to the opposite costal cartilage.

2. The lower margin of this wound is everted and the peritoneum is stripped back a distance of approximately 1 cm., thus exposing the under-surface of the deep fascia.

3. The ptosic colon and stomach with both omenta are now brought up and are delivered through the incision, the colon being spread out on a warm, moist towel.

4. An opening is made into the gastrocolonic space, into which one or two fingers are passed.

5. With these two fingers acting as guides, half a dozen or more ligatures half an inch apart are passed parallel to each other in and out through the mesocolon, extreme care being taken to avoid all blood-vessels and chyle-ducts. When all these ligatures have been passed, each is tied, thus shortening the mesocolon by several inches.

6. A long strand of chromicized catgut is now employed for a continuous suture, which is fixed in the deep fascia at the lower and outer tip of the wound. It is then passed through the base of the greater omentum, along the margin of the colon in such manner that, when tied, the outer surface of the base of the omentum is tightly approximated against the deep fascia, leaving the omentum to hang down, curtain-like, on the inside of the abdomen. The continuous suture is then carried across by taking a small bite of fascia and a larger bite of omentum, until the 30 cm. or more of omentum has been implanted in 8 or 10 cm. of the everted flap of the wound. Great care must be taken to avoid the omental blood-vessels.

7. The wound is closed by a continuous button-hole suture of chromicized catgut passed through the superficial fascia, muscle and deep fascia of the lower lip, catching the smaller omentum and coming out through the peritoneum, deep fascia, muscle and superficial fascia of the upper lip of the wound. This continuous suture may be fortified by a few figure-of-eight sutures of silkworm gut, the inner loop catching the margins of the superficial fascia and the outer loop embracing the fat and skin.

I have now successfully utilized this technic in a long series of cases, which I hope soon to utilize as the basis of a more analytic communication.

60 Groton Building.

WHY PROLONGED MEDICAL TREATMENT OF PEPTIC ULCER IS UNADVISABLE *

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To those who have seen much of the surgery of the digestive system I shall perhaps present nothing new; to others, and especially to those of medical rather than surgical inclinations, I hope the arguments presented herewith may appeal.

In my opinion, all cases of peptic ulcer deserve careful study as to diagnosis, followed by proper medical treatment for such a time as may suffice either to bring about complete or nearly complete cessation of symptoms, or to demonstrate that such relief is not obtainable under medical care.

In the course of a few months the pain, acid indigestion, vomiting, hemorrhage and other symptoms, and the rigidity and tenderness so commonly present, should disappear and the patient should regain his proper weight to a reasonable degree, if we are to be assured that a practical cure has resulted. Even in the face of fairly complete relief in all of these directions, the persistence of a dilated stomach from pyloric spasm or mechanical obstruction may still cause us anxiety. If a notably lesser degree of relief has been attained it is proper to consider carefully what obstacles to cure may be present.

First, let us consider the possibility of error in diagnosis. In no disease within my knowledge is reasonable certainty of diagnosis in most cases so closely bound up with the possibility of error in others. In the first fifty cases of ulcer[1] in which I had operations performed, the preoperative diagnosis was correct in forty-eight, and in the forty-ninth case, was correct in so far as it pertained to the diagnosis of a previous ulcer, although the acute symptoms were due not to a fresh ulcer as diagnosed, but to incarceration and intermittent pinching of the pylorus and duodenum in a Treitz hernia. The remaining case had been diagnosed as one of gall-stones, and with the utmost confidence, since typical biliary colic had been present. All of the symptoms proved to have been due to a duodenal ulcer, which blocked the common duct.

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* Read before the Denver County Medical Society, Jan. 20, 1914.

But this showing is entirely too favorable, since ulcer was meanwhile diagnosed in at least a half dozen cases in which some other disease was found at operation, these cases being therefore excluded from the report.

Admitting a high degree of certainty in the diagnosis of gastric ulcer, and especially since the more general use of the bismuth meal and the Roentgen examination, there are yet enough cases in which error seems to be unavoidable to make too long delay in appealing to the surgeon unadvisable. I should not freely make such a statement if my opinion were based solely on my own efforts at diagnosis. I think it justifiable, however, since I have seen repeatedly at operation, errors in diagnosis as to ulcer in cases which have passed through the hands of the greatest authorities on digestive diseases, not only of this country, but of Europe. One patient had been treated for ulcer for half a life-time, yet had no ulcer, nor any sign that ulcer had ever existed, the lesion being in the appendix.

Another case reported to me was treated for years as ulcer by a gastro-enterologist, who has done as much perhaps as any one in America to advance our knowledge of digestive diseases. Cure resulted from the removal of gall-stones, and no adhesion, scar or other evidence of previous gastric ulcer was found at the time of operation, although most carefully sought for by one or our greatest surgeons. The internist, on being told of the result, stated that he was confirmed, by the report, in his belief that he could cure gastric ulcer so that no traces of it could be found on examination of the stomach. Surely this is misguided medical enthusiasm gone mad!

I have personally seen many less spectacular examples of error in patients coming to operation after long-continued treatment for ulcer elsewhere, and I do not doubt that I have myself been guilty of error under similar circumstances.

There is much truth in the remark attributed to Moynihan that "the most frequent site of gastric ulcer is the right lower quadrant of the abdomen"—a sarcastic but deserved commentary on the frequency with which the symptoms of chronic appendicitis are attributed to gastric ulcer. It is unfortunate that the recognition of this state of affairs is not so common among medical men as among surgeons of experience.

If pyloric spasm with great dilatation of the stomach follows the irritation of a chronic appendicitis, so that the pylorus is found in the appendiceal territory, the positive diagnosis may be, so far as I know, practically impossible, as between pyloric ulcer and chronic appendicitis. I have recently examined two such cases which had each been treated for approximately twenty-five years as ulcer, yet the appendix alone was found at fault on exploration.

Perhaps everyone doing much work in this line has seen one of those pitiable cases, in which after years of medical treatment a normal gall-bladder has been drained by one surgeon, an unjustifiable gastro-enterostomy performed by another, a floating kidney anchored by a third, and in which the removal of a retrocecal appendix has at last brought relief. Such troubles are not wholly due to lack of diagnostic acumen in the attendants, for some of the cases are most obscure, and are to be diagnosed and cured only by a general abdominal exploration followed by proper surgical measures.

There are certain unusual conditions within the abdomen incapable of preoperative diagnosis, so far as I know, which may simulate ulcer so closely that years of medical treatment are submitted to in certain instances. Thus, I have encountered pinching of the pylorus and duodenum in a Treitz hernia, as mentioned above; compression of the duodenum by the superior mesenteric vessels, with dilatation of its proximal portion; kinking of the viscus by adhesions about the gall-bladder and pressure on it by gall-stone, and distortion from various causes, bringing about partial obstruction. In some of these cases the diagnosis of ulcer seemed to rest on a solid foundation, since pain, hyperacidity, vomiting, hematemesis, dilatation of the stomach, rigidity and tenderness were present, but medical treatment was of little or no avail in any.

We have just discharged, after cure by operation, one of those unusual cases, in which, as described by Dr. Leonard Freeman, the findings were as follows:

> The duodenum ran directly downward, beneath the transverse mesocolon; then turning to the left it passed under the superior mesenteric vessels, well below the mesocolon, and appeared upon the left aspect of the mesentery of the small bowel. A strong band of connective tissue from the mesentery dragged a loop of the first portion of the jejunum upward to a point just above the place of emergence of the duodenum, in such a manner as to sharply kink the bowel. Above this kink the duodenum was dilated, as was also the stomach to a moderate degree. The pyloric opening was unusually large.

With our present facilities, a case of this kind is utterly impossible of exact diagnosis. We did not think it ulcer, but could not make a more definite diagnosis than that of some mechanical obstruction near the duodenum. The patient had been sent to us with a diagnosis of gastric ulcer requiring operation.

One patient recently operated on had long been suspected of having ulcer because of high acidity, relieved by alkalies and by food, hunger, pain, tenderness and rigidity in the region of the pylorus, but less sharply defined than usual. The appendix was finally thought to be the cause of the trouble. It was found high behind the cecum, with a fresh attack of inflammation. At the edge of the liver, reaching most closely toward the pylorus, was the scar of a gumma. The patient had been subjected to rigorous antiluetic treatment about three years ago by his genito-urinary adviser, but no sign of the gumma had been detected either by him or by me, doubtless because we believed so strongly in the ulcer theory at that time that our judgment was biased. The stomach presented no lesion.

Ulcer is occasionally diagnosed in cases in which the true diseased condition is found in a very small central-line hernia through the abdominal wall. There is little excuse for failure to find the hernia if carefully sought for, but perhaps, for every one that fails to find the hernia, ten physicians fail to recognize the possibilities in the way of gastric symptoms in these cases. There is a very definite association between such hernias, perhaps no larger than a split pea and discoverable only on the closest examination, and ulcer of the stomach. I believe that the explanation must lie in the production of pyloric spasm with gastric retention, as in the case of reflex irritation from the appendix or gall-bladder. This seems more probable in those instances in which the omentum is pinched in the hernia than in other cases.

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[1] Hall, J. N.: Diagnosis of Gastric Ulcer as Tested by Operation, Am. Jour. Med. Sc., May, 1909; abstr., The Journal A.M.A., May 29, 1909, p. 1790.

In my experience the error has generally lain at other doors than that of the internist when operation for supposed gastric ulcer has been undertaken in the gastric crises of tabes. The possibility of the presence of this cause of gastric symptoms should be considered by the surgeon before criticizing the internist for his prolonged medical treatment of the case. Yet I have seen ulcer and the gastric crises of tabes coexist, the ulcer being proved at operation.

Secondly, we should consider the possibility that more than one disease may be present. Gastric or duodenal ulcer is frequently found, apparently as the sequel of a chronic appendicitis, the long-continued pyloric spasm and hyperacidity doubtless being responsible. I have two such cases in the hospital at this time. No treatment of the stomach alone, medical or surgical, can cure such a case, while after appendectomy the ulcer is amenable to surgical, and might be perhaps even to medical treatment.

The combination of ulcer and gall-bladder disease is too frequent to require extended consideration. The not infrequent addition of gall-stone disease in cases of ulcer which have succeeded chronic appendicitis is exceedingly difficult of diagnosis, since every feature of biliary colic, including the typical pain and the jaundice, may be imitated by the extension of a duodenal ulcer to the region of the papilla, with mechanical interference with the emptying of the duct. Involvement of the pancreas, adhesions to neighboring organs or to the abdominal wall, or other addition to the pathology of ulcer is often sufficient to prevent cure by any but surgical means.

Thirdly, we have the danger of complications of ulcer which do much damage before they are recognizable. In about 5 per cent. of my cases of apparently simple ulcer, cancer was already present at operation, demonstrably originating from the ulcer. The presence of a high gastric acidity, even in a patient in the fourth decade, who presents every feature of ulcer, is no guarantee that malignant disease has not already developed, and neither gastric analysis nor roentgenoscopy after ingestion of bismuth, nor yet any other procedure enables us to make the diagnosis in a case of this kind so early as we may make it by exploration. After marked decrease of the acidity, no possible excuse should be accepted for long delay in advising exploration, for the danger of cancer is recognized by all under these conditions. The forceful figures from the Mayo clinic as to the great frequency of origin of gastric cancer from ulcer need not be quoted again in this connection. The danger of death from hemorrhage or perforation is so well recognized as to need but the barest mention. Those who have seen the dire effects of perforation with subsequently developing subphrenic abscess must indeed be prejudiced if they do not admit the desirability of surgical intervention before the advent of such a dreadful complication. Serious damage to the gall-passages or the pancreas, especially in duodenal ulcer, is a frequent finding, and has already been considered.

The general recognition of the fact that the greatly dilated stomach, with its interference with nutrition and its open invitation thereby to tuberculosis or other grave disease, is an extremely common result of active ulcer or the scar of ulcer, should lead us to attempt early cure by operative means. I have grave doubt of the advisability of any prolonged medical treatment of ulcer in this location, since the cicatricial contraction following healing is often a graver condition than that presented by the active ulcer, to say nothing of the danger of cancer.

In approximately 4 per cent. of my operated cases, hour-glass stomach was present from the effects of a girdling ulcer. We cannot tell how serious may be the damage going on in the gastric wall from a continuance of the ulcerative process, and so formidable a complication should be avoided by following the rule to explore early in case of doubt.

From a previous paper[2] I quote the following paragraph regarding arteriosclerosis as a complication of gastric ulcer:

> The long-continued indigestion, with the throwing into the blood-stream of the products of imperfect digestion and metabolism is a prolific source of arterial degeneration in even comparatively young subjects. I have many times noted definitely palpable arteries in patients with ulcer before the middle of the fourth decade. The tendency to a wide-spread tissue degeneration in these cases has not received proper consideration.

There is, then, an early limit beyond which the further use of test-meals, washing of the stomach, administration of bismuth and alkalies, feeding of especially prepared foods, duodenal feeding and other measures short of surgical intervention, are, in the face of modern gastric surgery, utterly unjustifiable. The danger of either hemorrhage, perforation or cancer is greater than the danger of intervention, to say nothing of other possibilities of evil.

Finally: The medical man who treats his patients indefinitely under the diagnosis of hyperacidity, acid gastritis, gaseous indigestion, biliousness, gastralgia, dyspepsia, etc., should familiarize himself with the actual findings at operation in such digestive diseases, as he may do at any clinic at which these conditions are regarded as on the border-line, and hence are investigated conjointly by the physician and the surgeon, as they should be everywhere.

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[2] Hall, J. N.: The Complications of Peptic Ulcer, Med. Rec., Sept. 27, 1913, p. 566.

Sanitation and Vacations.—Many a person obeys the call, "back to Nature" with direful results, for when he gets in Nature's solitude he thinks he can disregard Nature's law. Sanitary habits are quite as important in the wilds as in the tenements. It especially grieves the heart of the sanitarian to note how frequently people contract typhoid fever at country, mountain or seashore resorts. The excess of typhoid fever in the autumn now goes by the special name of "vacation typhoid." The insanitary conditions found in many sparsely settled communities temporarily occupied during the summer season often challenge the conditions found in military camps during the bow-and-arrow age. Before people leave the sanitary security of a well-guarded city for vacation grounds, they should demand a bill of health from the health officer.—M. J. Rosenau in *Vermont Medical Monthly.*

Dr. Robert [illegible] Library
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A SERO-ENZYME DIAGNOSIS OF SYPHILIS

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DETROIT

The fact that the formation of proteolytic enzymes in the blood may be stimulated through the parenteral introduction of proteins into the organism led to the discovery of such enzymes in certain normal and pathologic conditions in which complex proteins are swept into the circulation. The process of cleavage through these enzymes takes place whenever proteins not normally occurring in the circulation find their way into it, be this either the result of physiologic processes as in pregnancy, or due to the action of certain pathogenic organisms which by their presence bring about abnormal changes in the cell protoplasm. Within certain limits the organism will be stimulated by the presence of these complex proteins in the blood to the production of enzymes capable of splitting them into their simpler components, which are either assimilated or eliminated by the organism. The function of these enzymes in the blood is in this respect similar to the digestive ferments in the gastro-intestinal tract, in that they split the specific substances which make up our food into simple or native protein molecules capable of assimilation.

The discovery of chorionic epithelium in the blood during pregnancy by Schmorl and Veit induced Abderhalden to study the action of such blood-serum on proteins. As a result of these studies, Abderhalden[1] developed the method for the diagnosis of pregnancy, using placental tissue for the reaction. Freund and Abderhalden[2] extended the application of this method to the diagnosis of neoplasms. More recently this method was applied to the diagnosis of tuberculosis by F. Jessen,[3] while Bundschuh and Roemer,[4] as well as J. Fischer,[5] made use of it in psychiatry. The scope of this preliminary communication does not permit the citing of the already extensive literature, which demonstrates the applicability of this method to many pathologic conditions.

In view of these facts it seemed advisable to see if the serum of syphilitic patients contained such enzymes as are directed toward the *Spirochaeta pallida* or the cell degenerations caused by its presence in the body.

The serum normally contains dialyzable substances which will give the reaction when no tissue is added. It is evident from this that not only such reactions must be considered positive which give a dark violet color, but also one must compare the reaction in the two tubes for differences in depth of color.

A positive reaction shows that the serum examined contains substances which have influenced the added protein so that it has become dialyzable, that is, the serum contains proteolytic ferments. The formation of these proteolytic ferments, which are considered specific, presupposes the presence of split protein in the serum. Thus a positive reaction proves (1) the entrance into the blood of substances foreign to it, and (2) the formation of a specific proteolytic ferment in the serum. The reaction disappears in case of clinical cure, or if the entrance of foreign proteins into the blood-stream ceases, and we may assume that the organism has lost the power to produce the specific ferments in cases in which the disease is still active. If one considers the course of syphilis in its various forms, which again may differ markedly in themselves, we must realize that aside from the virulence of the infecting agent there must be present in the organism conditions which possibly are the cause of these various manifestations of the disease.

The tissues made use of in these experiments are the glistening pearly white gummas resulting from the inoculation of rabbits with syphilitic tissue or blood of patients affected with syphilis. The resulting lesions, as pointed out in a previous paper,[6] are not gummas in the strict sense of the term, but mucoid degeneration of the tissue. These lesions contain the *Spirochaeta pallida* in large numbers, and practically all the original tissue has undergone degeneration. In addition, these lesions are almost free from blood and so exclude a possible factor of error in the test. By carefully trimming away any apparently sound tissue the gumma are cut into small pieces about 4 c.mm. in size, boiled for ten minutes, the water is changed and the tissue boiled again for five minutes. This process is repeated until the water in which the tissue has been boiled no longer gives the color reaction with triketohydrindenhydrate. Then it may either be placed in a sterile bottle with the water in which it was boiled last, to which a small amount of chloroform and toluol have been added, or the tissue may be dried *in vacuo* over sulphuric acid and ground into a fine powder, which is kept in an amber-colored glass bottle. If the stopper of the bottle is dipped into toluol the ground-up tissue will be under a toluol vapor.

Before the reaction is undertaken it is well to test the dialyzing thimbles. This is done by soaking them in water and then bringing the water just to a boil. After this has been repeated they are set aside to cool, and some chloroform and toluol are added to the water. The dialyzing thimbles are first tested with fresh unhemolyzed rabbit's serum to find out whether they allow protein to pass. Those thimbles which allow the passage of protein should be discarded. After the dialyzing shells have been cleaned as described above, the second preliminary test is carried out with a 0.5 per cent. aqueous solution of silk peptone. The shells should allow the amino-acids of the peptone to pass. Shells fulfilling these preliminary conditions may be used for the tests for quite a period, when they should be tested again for any possible flaw. The test is carried out as follows: Eight c.c. of sterilized filtered water are placed in the glass tubes and about 6 drops of toluol are added. Each single test requires three glass tubes and as many shells. The serum, which must not be more than eighteen hours old, should be clear and free from any traces of hemolysis. From 0.8 to 1 c.c. of serum are required for the test. To reduce the sources of error the tissue is boiled again for five minutes before the test is made, and the water in which the tissue was boiled is tested with triketohydrindenhydrate for the presence of amino-acids. The dialyzing shells are picked up with a pair of hemostats; a piece of tissue is placed in the bottom of the first shell with clean forceps. To this is added by the use of a small clean funnel half of the clear serum available, and lastly a few drops of toluol. The outside of the shell is carefully rinsed with distilled water and the shell placed into the glass containing the water and toluol. The glass container is closed with a stopper to prevent evaporation. The second dialyzing shell receives the same amount of serum and toluol but no tissue, and is otherwise treated as the first. The third shell receives tissue plus an equal amount of sterile distilled water and toluol, but no serum. If two or more serums are tested, one control of tissue will do for all. The tubes are placed into the incubator for from twelve to sixteen hours. By carrying out this test late in the afternoon the testing of the dialysate may be done the following morning.

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[1] Abderhalden: München. med. Wchnschr., 1913, No. 13, p. 701.

[2] Freund and Abderhalden: München. med. Wchnschr., 1913, No. 14, p. 763.

[3] Jessen, F.: Med. Klinik, 1913, No. 43, p. 1460.

[4] Bundschuh and Roemer: Deutsch. med. Wchnschr., 1913, No. 42, p. 2029.

[5] Fischer, J.: Deutsch. med. Wchnschr., 1913, No. 44, p. 2138.

[6] Baeslack, F. W.: Jour. Infect. Dis., 1913, xii, 60.

After removing the dialyzing shell, 5 c.c. of the dialysate are placed into a clean test-tube and 0.2 c.c. of a 1 per cent. aqueous solution of triketohydrindenhydrate are added, and the whole is allowed to boil actively for one minute.

The dialysate of the second tube containing only serum will frequently give a color-reaction. This is due to the presence of amino-acids in the serum. The interpretation of the test depends on the difference in the depth of color. The test is positive if the dialysate from Tube 1 gives a darker color-reaction than that of the second tube. The dialysate of the third tube should not give any color-reaction whatever. If the color-reaction *of the first and second dialysates are of the same intensity* or if the dialysate of the second tube gives a darker violet color than that of the first, the diagnosis is negative.

The entire procedure demands careful, clean technic, which, however, is not difficult to master.

WASSERMANN AND SERO-ENZYME REACTIONS

Case	Name	Sex*	Age	Date in Clinic, 1913	Stage of Disease	Treatment	Wassermann R.	Sero-Enzyme Test	Amt. of Serum Used for Each Tube, c.c.
1	B. H.	♂	23	12/12	Beginning of secondary stage	None	—	+	0.5
2	M. R.	♀	19	12/12	Secondary stage	None	++	+	0.5
3	T. T.	♂	29	12/15	Primary lesion	None	—	+	0.5
4	H. W.	♂	28	12/15	Secondary stage	None	—	+	0.5
5	T. B.	♂	21	12/17	Secondary stage	0.9 gm. neosalvarsan	+++	+	0.5
6	E. M.	♂	28	12/17	Tertiary	?	†	+	0.3
7	M. N.	♂	34	12/19	Primary lesion	None	+	+	0.5
8	W. T.	♂	39	12/19	Past secondary	0.9 gm. neosalvarsan twice	++	+	0.5
9	E. O.	♂	42	12/22	Primary lesions	None	—	+	0.5
10	F. H.	♂	32	12/23	Secondary eruption	None	++	+	0.5
11	E. O.	♀	37	12/23	Secondary eruption	Potassium iodid	±	+	0.25
12	S. H. H.	♂	26	12/24	Secondary eruption	?	—	+	0.5
13	J. O.	♂	24	12/26	Primary lesion	None	++	+	0.5
14	F. W.	♂	24	12/29	Secondary period (healed) ?	2 inj. intrav. of salvarsan + mercury or potassium iodid	—	—	0.5
15	J. H.	♂	37	12/29	Secondary lesions	?	—	+	0.5
16	E. F.	♂	24	12/30	Syphilitic anemia	2 intrav. inj. of salvarsan and potassium iodid	+++	+	0.5
17	J. P.	♂	26	12/31 1914	Tertiary	?	++	+	0.5
18	E. W.	♂	25	1/2	Primary lesion	None	++	+	0.5
19	D. B.	♂	25	1/2	Secondary	?	++	+	0.5
20	St. P.	♂	32	1/5	Chancroid	......	—	—	0.5
21	A. S.	♂	33	1/5	Primary lesion	None	—‡	+	0.1
22	G. M.	♂	?	1/5	General paresis	?	++§	—	0.5
23	M. B.	♂	?	1/5	General paresis	?	++§	—	0.5
24	C. A.	♂	36	1/7	Spec. Inf. 2 yrs. ago; no clinical symptoms	2 intrav. inj. of neosalv. + mercury + sod. cacodylate	++	+	0.3
25	M. S.	♂	34	1/9	Chancroid		—	—	0.5
26	No. 235	..	28	1/9	Secondary eruption	?	—	+	0.5
27	No. 252	♂	26	1/13	Late secondaries	?	+	+	0.3
28	R. B.	♀	39	1/16	Tertiary	?	+	+	0.25
29	B. C.	♂	26	1/16	Primary lesion	None	+	+	0.5
30	M. S.	♂	39	1/16	General paresis, 5 yrs.	?	+	+	0.5
31	H. D.	♂	45	1/17	Tabes	?	++§ +	— +	0.5 0.5
32	A. C.	♂	50	1/17	Tabes 6 years	?	++§ +	— +	0.5 0.5
33	K. M.	♂	54	1/17	Tabes 18 years	?	+++§	—	0.5
34	A. E.	♂	38	1/17	General paresis	?	++§	—	0.5
35	A. C.	♂	30	1/17	General paresis	?	++§ +	— +	0.5 0.5
36	E. F.	♂	24	1/17	General paresis	?	++§	—	0.5
37	M. L.	♂	24	1/17	General paresis	..	++§ +	— +	0.5 0.5
38	W. M.	♂	69	1/19	Tabes	?	+	+	0.5
39	C. M.	♂	39	1/19	Early tabes?	?	++	+	0.5
40	G. L.	♂	40	1/19	Late secondary	2 inj. of neosalvarsan	++	+	0.5
41	J. Cl.	♂	33	1/19	Late secondary	2 inj. of neosalvarsan + mercury	++	+	0.5
42	D. M.	♂	29	1/21	Tertiary lesion	?	+++	+	0.5
43	A. K.	♀	44	1/21	Tertiary lesion	?	+	+	0.5
44	F. H.	♂	36	1/21	Early tertiary	Mercury and one inj. of neosalvarsan	++	+	0.5
45	Ed. F.	♂	25	1/23	Primary lesion	None	+	+	0.5
46	O. W.	♂	18	1/23	Chancroid	.....	—	—	0.5
47	M. E.	♀	33	1/27	Tertiary lesion	.....	+++	+	0.5
48	A. A.	♀	26	1/27	Secondary stage	.....	++	+	0.5
49	F. S.	♂	13	1/29	Scarlet fever	.....	—	—	0.5
50	A. K.	♀	22	1/29 1913	Scarlet fever	.....	+	—	0.5
51	J. M.	♂	18	12/18	Normal	.....	—	—	0.5
52	B.	♀	20	12/18	Normal	.....	—	—	0.5
53	F. B.	♂	39	12/18 1914	Normal	.....	—	—	0.5
54	M. S.	♂	26	1/30	Normal	.....	—	—	0.5
55	E. E.	♀	26	1/30	Congenital	?	..	+	0.5

* In this column ♂ denotes male and ♀ female. † Not taken. ‡ The small quantity of serum available in Case 21 may account for the result. § Spinal fluid.

In addition to the three cases of chancroid (Cases 20, 25 and 46), the serums of four normal persons and two scarlet fever patients were tested. The three cases of chancroid gave a negative sero-enzyme reaction and were also negative with the Wassermann reaction, which was true likewise of the serums of the normal persons. The serum of scarlet fever Case 49 was positive with the ox-heart antigen and negative with the fetal liver and rabbit-gumma antigen, while the serum of scarlet fever Case 50 gave a positive Wassermann (+ sign) reaction with the three above-named antigens. Both serums were negative with the sero-enzyme test.

The accompanying table was arranged from the histories taken at the time the patients visited the clinic.

The entire number of fifty-five serums includes forty-six cases of syphilis. Eight serums came from patients in the primary stage of the disease, eighteen from those in the secondary stage, seven from tertiary syphilis, five from tabetics, seven from general paretics and one from a case of congenital lues. The remaining nine serums include four from normal persons, three from cases of chancroid, and two from scarlet fever patients.

Of the two scarlet fever patients, one, Case 50, gave a positive Wassermann with the three antigens employed, while the sero-enzyme reaction was negative. Aside from this case, the results of the Wassermann reaction correspond with the findings of the sero-enzyme reaction in the eight remaining serums. The cerebrospinal fluid obtained from nine cases of tabes and general paresis gave a positive Wassermann reaction, while the sero-enzyme test was uniformly negative, demonstrating the absence of the enzyme in the cerebrospinal fluid. This divergence also shows that the factors entering into the Wassermann reaction are distinct from those bringing about the sero-enzyme test. The lack of these enzymes in the cerebrospinal fluid may be due to the relatively small number of white blood-cells present in this fluid, since the production of these enzymes may depend on these cells, for the serums from patients in this stage of the disease gave a uniformly positive sero-enzyme reaction. Case 14, in which the patient presented himself at the clinic with a recently acquired gonorrhea and gave a history of specific infection followed by prompt treatment, was free from any clinical signs of syphilis. Since both the Wassermann and sero-enzyme tests were negative, it is probable that this patient has been cured.

While the Wassermann reaction at times is negative in the primary stage of syphilis, and was negative in three cases out of eight (Cases 3, 9 and 21) in this series, the sero-enzyme reaction was positive in all. Out of the eighteen cases of secondary syphilis, four, Cases 4, 12, 16, 26, gave a negative Wassermann reaction, but all gave positive sero-enzyme reactions. The specific enzyme present in the serums of syphilitics is probably directed against the degenerated cell proteins rather than against the infecting agent. The sero-enzyme reaction appears to be specific and demonstrable at an earlier period than the complement-fixation test. This may be due to the production of specific enzymes stimulated by minute quantities of protein foreign to the blood, and because these proteins are constantly finding their way into the circulation in the course of this disease. The Wassermann reactions have been carried out with three antigens, and have been repeated in most instances for the purpose of double-checking the results.

I wish to thank Dr. R. H. Varny for carrying out some of the Wassermann reactions, and Dr. William E. Keane, and Dr. G. L. Kiefer for giving me access to their clinics.

THE REMOVAL OF THE APPENDIX IN ALL CASES OF APPENDICITIS WITH LOCALIZED ABSCESS

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As many inquiries have been received since the publication of a former article[1] dealing with the removal of the appendix in all cases of appendicitis with localized abscess, I desire again to present the subject for consideration and criticism.

In discussing the subject with many surgeons of large experience I find that the majority still seem inclined to follow the plan which was apparently in universal use many years ago, that is, simple incision and drainage of the abscess, making no effort to remove the appendix unless it presents itself within the confines of the abscess, practically free from adhesions and in fact inviting removal. Furthermore, the trend of the majority of articles dealing with this question, as well as the method of handling these cases at the various large surgical clinics, would indicate that by far the greater number of operators remove the appendix only in a comparatively small percentage of such cases.

The reason usually given by operators who follow this course is that it is unsafe to separate the adhesions forming the boundary of the abscess, thereby during the search for the appendix, liberating pus and septic material into the uncontaminated areas of the peritoneum. This was the opinion held by myself up to some six or seven years ago, my former custom being to remove the appendix only in instances in which such removal was easy and could be accomplished with the separation of few adhesions.

During the past seven years I have operated on 501 cases of appendicular abscess sharply localized. This series does not include any case in which at operation, the general peritoneal cavity was found to be infected, or cases of gangrene of the appendix without the formation of a distinct peri-appendicular abscess. In this series of cases the appendix was removed in every instance at the primary operation whether easily detected within the abscess cavity or whether deeply buried by adhesions.

In the 501 cases six deaths occurred. One patient, a little girl aged 4, died thirty-six hours after operation, from what cause I do not know, as this operation was done in the country and I could get no clear postoperative history. A man, aged 49, died sixteen days after operation from cardiac thrombosis. A boy, aged 17, died four days following operation from septicemia. Another patient, a woman, aged 31, died from septicemia six days after operation. A man aged 27, died twelve days following operation from postoperative obstruction, further intervention being refused. The sixth patient, a man aged 24, died from secondary hemorrhage the third day after operation. The ages of the patients included in this series ranged from 10 months to 84 years.

The results secured are infinitely better than those I obtained under the old plan of treatment, in which in a large proportion of cases, the appendix was allowed to remain undisturbed, with a resultant mortality of 8 per cent., whereas, in the series of 500 cases of appendicitis with abscess, mentioned above, the appendix in every instance being removed, the mortality was 1.2 per cent.

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[1] Knott, Van Buren: Treatment of Localized Appendicular Abscess, The Journal A. M. A., Aug. 12, 1911, p. 525.

It is to be noted that in the six fatal cases of this series, not a death occurred from peritonitis, yet it seems to be the fear of inviting, or even occasioning a spreading peritonitis which restrains many operators from removing the appendix in abscess cases. Since the adoption of the Fowler position and drainage of the peritoneal cavity by means of a large split rubber tube inserted to the bottom of the rectovesical pouch or culdesac, supplemented by saline proctoclysis, peritonitis has been shorn of its terrors.

It was noticed that, in those cases of diffuse septic peritonitis due to perforation of the appendix which were so treated, convalescence was almost uniformly rapid and smooth and without distressing sequelae. The fear of diffuse septic peritonitis having been removed, the way toward the removal of the appendix was cleared and the systematic removal of the appendix in all cases became the logical, routine procedure.

During the early work in this series it was seen that, during the search for and the removal of the appendix, small pus collections were frequently encountered here and there among the adherent coils of intestine and omentum, whose presence had not been suspected and which would have been overlooked had not the adhesions been separated. Drainage of the larger pus collection would not have reached these smaller hidden septic foci. These have been found on both sides of the abscess cavity and as many as eleven distinct pus collections have been noted.

In many instances, in which because of a high location of the appendix the abscess cavity was high and tightly walled off, free separation of the adhesions forming its floor would reveal a large amount of pus or purulent serum in the rectovesical pouch, at times quite remote from the appendix, which would certainly have been otherwise overlooked. Thus the reasons have been exposed for many a secondary operation for what has been improperly termed a secondary abscess. Increased experience with the method has tended to confirm in every particular the accuracy of this early observation.

In the series of cases which forms the basis for this article, there was but one death from postoperative obstruction. The free separation of adhesions tends greatly to lessen the frequency of this serious and often fatal complication, as it establishes free communication between the region of the cecum and appendix formerly occupied by the abscess cavity, and the lowermost pelvic peritoneal pouch, permitting the best drainage of both regions by a single tube and thus doing away with the necessity for multiple drains either of tube or gauze.

The percentage of fecal fistulas has in this series of cases been unusually small. I am not able to give the exact figures, as many of the patients were operated on at their homes, but in those patients operated on in the hospital and these were by far the more numerous, the occurrence of fecal fistulas was seldom noted.

This may be at least partially explained as follows: The removal of the sloughing appendix at the time of the primary operation, with proper management of the stump or in some cases the diseased cecal wall itself, has limited the tendency of the gangrenous process to invade adjacent intestinal tissue. Again, the separation of all adhesions, entirely obliterating the abscess cavity and throwing together the space formerly occupied by the abscess and the lower peritoneal pouch, and the insertion of one large tube in the rectovesical culdesac for drainage, renders unnecessary the placing of multiple drains, either of tube or gauze, in the cecal region where, by exercising pressure on tissues whose vitality is impaired, they may determine the formation of fistulas by pressure necrosis.

With the patient in the exaggerated Fowler's position, all adhesions having been separated, we secure at once the collection of septic fluids in the most dependent portion of the peritoneal sac, whence they are rapidly conveyed to the surface through the large split rubber tube with the loose-fitting gauze wick.

Because of the rapid free drainage so secured, the tendency to postoperative sepsis manifested by hepatic abscess, pylephlebitis, subphrenic abscess, empyema, etc., is much less marked than in those cases in which a leaking appendix is permitted to remain, hourly adding its burden of septic and infectious material to the load which is in many instances already straining the powers of resistance and recuperation to the very limit.

In support of this statement I may mention that Dr. George Ross[2] of Philadelphia, reported twenty-four cases of subphrenic abscess, practically every case occurring in patients in whom, at the primary operation, the appendix had been left, and stated that for four years he had not left an appendix in operating in these abscess cases and that he had had no occasion for regret.

In my experience a second operation in appendicitis with abscess formation in which the first operation consisted merely of incision and drainage, has been necessary much more frequently than is usually stated in text-books. As nearly as I can estimate it occurs in about 25 per cent. of cases.

I recall one patient, the brother of a physician, who had been operated on four times in three years for appendicitis with abscess, merely by incision and drainage. I removed this man's appendix from a mass of dense adhesions with abscess during his fifth attack, which occurred also within the three-year limit. At the request of the physician who had performed the initial operation, I have several times operated on patients who had following incision and drainage, a recurrence of the peri-appendicular abscess, before they left the hospital. Others have been operated on for appendicitis with abscess formation and had the appendix removed months or years following the first operation.

The removal of the appendix at a secondary operation is frequently very difficult because of the density of the surrounding adhesions. In the majority of instances it will be found much easier to remove it at the first operation and this should now be done rather than subject the patient to a prolonged and often serious second operation with the resulting time loss and unnecessary risk thereby enforced.

Dr. Archibald MacLaren[3] of St. Paul, in a paper on rectal drainage for the relief of certain advanced septic conditions in the lower pelvis complicating suppurative appendicitis, states that, since employing the method above advocated, he has noted the indications for rectal drainage in his cases to be reduced just 50 per cent.

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[2] Ross, G. G.: Subphrenic Abscess the Result of Acute Inflammation of the Vermiform Appendix, THE JOURNAL A.M.A., Aug. 12, 1911, p. 526.

[3] MacLaren, Archibald: The Proper Treatment of Intraperitoneal Abscess in the Lower Abdomen, with Special Reference to Rectal Drainage in Pelvic Abscess, THE JOURNAL A. M. A., June 25, 1910, p. 2105.

Dr. J. Rilus Eastman[4] of Indianapolis, reports that his results have been much better since he has been removing the appendix in every case of this character; he most heartily commends the method.

In brief, the technic of the procedure recommended is the following: The incision, regardless of the location of the abscess, is made through the right rectus muscle, and the peritoneal cavity is freely opened. A small gauze pack is tucked into the upper angle of the wound and so adjusted as to prevent any extravasation of pus toward the median line. A gauze pack is adjusted also from the upper angle of the wound to the lower pelvis to prevent any extravasation toward the left. The abscess cavity is then freely opened with the fingers unless opened by the peritoneal incision, and the pus is rapidly mopped up with gauze sponges. The appendix is then exposed and removed. All adhesions separating the abscess cavity from the lower pelvis are now freely separated and the pus or seropus which is usually found in the lower peritoneal pouch is rapidly removed by sponges. A large split rubber tube, carrying a loose-fitting wick of iodoform gauze, is inserted through the lower angle of the wound to the bottom of the rectovesical pouch, care being taken that it does not, at the lower end, impinge on an intestinal coil. The protecting gauze is removed and the wound closed down to the tube with interrupted through-and-through sutures of silkworm-gut. In these cases a continuous-layer suture is greatly inferior to a through-and-through suture because of the danger of infection of the wound. As drainage of the peritoneal cavity can be maintained only for a relatively short time, this drainage must, in cases of this character, be very free, and the use of a large tube, placed as above described, secures this result.

The patient is then placed in bed, the head of which is elevated at least 30 inches from the floor. The patient is turned on his right side inclining toward the prone position, and a special nurse, instructed to see that the right-side posture is maintained for at least twenty-four hours, should be placed in charge. Proctoclysis is immediately begun and continued as long as needed in each case. Water is allowed at once, but in small quantities. Morphin is given whenever necessary to control pain. No nourishment is given for at least forty-eight hours and then it is given sparingly.

The cases which furnish the material for the conclusions reached in this article represent an unbroken series of similar treatments, as I have removed the appendix in every case of appendicitis with localized abscess, since the first one of the series was removed.

Many of these patients were operated on in their homes, frequently under most unfavorable conditions, and I feel that the series furnishes a severe test of the method.

In considering the mortality of this procedure, which as previously remarked, has been, in this series, 1.2 per cent., we not only must compare with the primary mortality of similar cases treated by drainage alone, but also must add to this latter mortality that attending those cases in which because of recurrence of disease, a second or a third operation becomes necessary. In my experience, not only has the mortality been greatly reduced by this plan of treatment, but also convalescence has been much shortened.

The procedure is not advocated for the operator with little experience in abdominal surgery; but it may be added, no man of little experience should attempt to operate on any acute suppurative process within the abdomen. The technic was, I freely admit, adopted as a routine measure with some misgiving at first, and I rather expected to be forced to discontinue it, at least in certain instances, but as experience with it increased and it was noted that adhesions in these cases could be freely separated, not only with impunity, but also under proper precautions, even with benefit, my faith in it has been strengthened and I no longer hesitate to offer it as a routine procedure to the competent surgeon, for I firmly believe that by its employment convalescence will be shortened, postoperative sequelae will occur less frequently and mortality be reduced.

A CLINICAL STUDY OF ASTHMA

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The purpose of this article is not to discuss asthma as a disease, but rather to treat it as a symptom, and to recite the results obtained in a series of cases based on this assumption.

Before proceeding to the case histories I would call attention to a review of the condition commonly called asthma and the classical theories generally accepted as to its cause.

Asthma is often designated as gastric, renal, nasal, bronchial, cardiac, etc. Two general classifications bring it down to cardiac and bronchial, though Osler says that, as a matter of fact, true asthma is rarely found in diseases of the heart; that while a dyspnea is present, it is not an asthmatic paroxysm, because it is an inspiratory instead of an expiratory interference.

Of special pathology there is practically none, such changes as are found being secondary, in the form of emphysema, bronchitis or dilatation of the right heart. The occurrence of asthma is paroxysmal and painless, stamping it at once a neurosis. It is characterized by spasm of the bronchi and the respiratory muscles, including also the diaphragm, and is followed by a vasomotor disturbance in the mucous membrane of the bronchi, large and small.

Briefly, the theories as to the cause of asthma, are as follows:

1. Spasm of the circular muscular fibers of the bronchial wall.
2. Hyperemia of the mucous membrane of the bronchioles.
3. Spasm of the diaphragm.

The first two are the most tenable, and, indeed, the results of investigations are causing, and justly, the first to be classified as the cause, with the second and third secondary in effect to the first, that is, resulting from the spasm of the bronchioles.

After disposing of the second and third theory, we then ask what produces the condition named in the first theory? The nearest answer yet offered is that it is a reflex from an irritation produced elsewhere in the body. As proof of this theory I wish to offer the following case histories compiled during the past two or three years, in the hope that more attention may be given to thorough physical examination of asthmatic sufferers. The cases cited are selected from different series of causes and are illustrative of what may cause an asthmatic paroxysm:

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[4] Eastman, J. Rilus: Impressions of Appendicitis and Sigmoidal Diverticulitis, Indianapolis Med. Jour., 1912, xv, 49.

REPORT OF CASES

Case 1.—Mrs. F., an American, aged 32, has had the ordinary diseases of childhood. When 8 years of age she fell from a picket fence, alighting in a sitting posture. She was confined to bed for several days. The first menstruation, which was very painful, was at the age of 14. At this time she experienced the first asthmatic attack. Attacks of asthma came with every subsequent menstruation, each menstruation being painful. At the age of 26 she married and had no asthma for the subsequent six years, during which time she bore three children. The youngest child is now nearly 3, and for the past year the asthma has been increasing with each menstruation.

Examination.—Asthma here pointed so directly to a uterine disorder that a vaginal examination was made, and a condition found of retroversion with adhesions, probably due to the fall. The diagnosis of asthma reflex from uterine disorder was made.

Treatment.—A ventral fixation and ovariotomy were done April, 1912. Since the operation the patient has gained 15 to 20 pounds, with not a trace of asthma to date—May, 1913. The menstrual flow has been normal ever since. There have been four similar cases in this series, with three full recoveries. One showed no results.

Case 2 is of course rare but demonstrates the possibilities, and it is not by any means isolated in occurrence.

Case 2.—Mr. G., aged 30, is married. The history is negative except that the right testicle had not descended. At the age of 13 asthma developed and increased in severity until the patient was 18 years of age, when the attacks became terrific. The patient became a masturbator and reports that a severe attack followed each indulgence. At the time of the attack the patient complained of severe pain in the right inguinal region, which pain subsided in forty-eight to seventy-two hours and the asthma ceased shortly after. He was operated on for appendicitis five years ago. It was recommended that he have an exploratory abdominal section for investigation concerning the testicle which had not descended. The patient refused to act on the recommendation and returned to his home in the East. Two months later he wrote that his family physician had taken him to a surgeon because of excessive pain in the right inguinal region. An encysted testicle was removed. I have since heard from him twice and he is perfectly free from asthma. The operation was performed two years ago.

Case 3 illustrates a class that is probably the most common; at the same time it is the most easily diagnosed and responds readily to treatment.

Case 3.—Mr. W., aged 65, has had asthma for fifteen years. His occupation is that of a broker. He is sedentary in his habits and has been a heavy eater and drinker for many years. There has been a great deal of constipation during the past twenty years; also indigestion with formation of gas and consequent pain. The amount of food was lessened. Drinking has been eliminated for the past five years. The patient is relieved of attacks of asthma when fasting or resting in bed for a few days.

Examination.—The blood-pressure was 180. The urine was heavily loaded with indican and there was some albumin. Coarse râles were heard in the lungs and emphysema was present. The heart was irregular in action with a pulse-rate of 84. The abdomen was very protuberant. There was gastroptosis, descending 2 inches below the umbilicus. Enteroptosis was also marked. The abdomen was excessively tympanitic. Inguinal hernia has existed since the age of 35. A diagnosis of reflex asthma from abdominal ptosis and intestinal putrefaction was made.

Treatment.—An abdominal support was fitted very snugly supporting the walls firmly. The diet was regulated, proteids and coffee being eliminated almost entirely. Intestinal antiseptics were given and bowel movements were aided. Tincture of iodin in milk for high blood-pressure with rest in bed was prescribed. The result, ten days later, was a much lessened amount of indican, while the blood-pressure was 150. The bowels moved daily and the patient said that breathing had not been so well or easily accomplished in ten years. The asthma had practically disappeared. Dyspnea had been almost continuous. One year has since elapsed (June, 1913), and the patient is still free from asthma unless dietetic errors occur, when asthma again presents itself.

Of this last class there have been fourteen cases. All have responded to treatment but two. One patient neglected to live up to the requirements and was eliminated from consideration. The other case has not been cleared up as yet, and probably will not be on this classification. Seven patients belonging to this class of cases have recovered entirely from their asthma. The remaining five are all much relieved. In all cases a return to the old methods of living, and the leaving off of abdominal support, precipitates an asthmatic attack. The intestinal antisepsis is no doubt the chief factor in the relief afforded; the belt, while essential, plays a secondary part.

As this article is being written a colleague reports an acute case.

Case 4.—A man aged 45, awakened at 2 a. m. with a first attack of asthma. A canned-fish supper had been partaken of on the preceding evening. The attack was terminated not by morphin but by gastric lavage and a high enema.

The next case illustrates a large class and requires careful examination.

Case 5.—Miss S., aged 19, has had asthma since 7 years of age, following an attack of bronchitis. The paroxysms are almost continuous.

Examination.—The patient has adenoids and hypertrophied tonsils, also septum deviation. She is very anemic. The hemoglobin is 60. There is chronic constipation. The urine is highly colored and heavily loaded with indican.

Treatment.—The adenoids and tonsils were removed. The septum deviation was corrected and the bowels were regulated through the diet. There was marked improvement in the asthmatic condition. The patient is subject yet to mild and brief attacks, though she is gaining in weight. Eight months have passed since the operation. The regulation of the diet and bowels probably had more to do with this result than the operation, as the response was not marked until the intestinal condition was corrected.

Much stress has been laid on nasal disorders as a causative factor in asthma and it is true that this may account for some cases. We should go beyond this and try to determine what produces the nasal condition, unless a sharply defined anatomic malformation exists, causing pressure that only surgical interference can remove. Overlooking this point accounts for many failures to relieve the patient. A cure is effected in some cases in which nasal correction alone is secured, but in others the removal of nasal obstruction does not produce favorable results. So many of these sufferers show such very poor eliminative capacity that little can be expected from the mucous membrane of the nasal passages until the bowels, kidneys and skin are fully performing their functions.

The presence of adenoids in adults has caused asthma in seven patients. That is, seven responded to treatment after removal of adenoids, while many more than seven asthmatics who were the possessors of adenoids showed slight, if any, improvement after operation. The seven that did respond, however, made it worth while. In any event, the adenoid required attention.

The next class of cases has been little studied.

CASE 7.—Miss B., aged 28, had a negative family history. Menstruation began at the age of 13. There was marked dysmenorrhea after the first six months. The attack always preceded the flow by three or four days and abated when the flow was established. A dilatation eight months ago, repeated three months later by the family physician, has resulted in disappearance of the asthma. Menstruation is now practically normal.

Out of four other patients with similar histories only one has responded. Improvement in two out of five, however, made the result worth the effort. The question may be asked: Is the uterus, in patients in whom such treatment is unsuccessful, in reflex spasm from irritation of another center? I am not a gynecologist or a neurologist.

Reports are being made from time to time of successful results following the use of vaccines, and the manufacturers of biologic products are continually suggesting the use of vaccines in this affection, while much disappointment is being experienced as a result. Some cases, no doubt, have cleared up following the use of vaccine; not a vaccine used directly against asthma, but one that was indicated to meet another infection, the asthma, no doubt, being a reflex result.

As headache, backache and numerous other afflictions have proved to be but symptoms, I would suggest, reasoning from my own experience, that the consideration of asthma as a disease be dropped and the presence of asthma taken to be a symptom reflex. Instead of loading our patients with morphin and everything else in the U. S. P. in an effort to find a cure, we should take a little time between attacks and also during the paroxysm to study and examine these sufferers in a thorough and systematic manner and to obtain a full record of their histories from the date of their birth to the time they put themselves under our care. An inquiry into the menstrual history of female patients and into the condition of the alimentary tract in both sexes should be thorough. The urine examinations should have a complete record as to indican, urea, etc. There will be much disappointment and discouragement, but if the cause can be located once in ten times the result will be worth the time spent; and a record of the case well written and published will add one more link to the chain that will some day be almost complete as to possible causes, and we can at least tell our patients what produces the asthma, even though we cannot cure it. The treatment very often lies in preventing the attacks, hence is in the hands of the patients themselves and they need rigid instruction.

DIAGNOSIS OF WHOOPING-COUGH BY THE COMPLEMENT-DEVIATION TEST

PRELIMINARY NOTE *

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The purpose of this preliminary report is to record the fact that we have succeeded in making the diagnosis of whooping-cough in all stages—catarrhal, paroxysmal and convalescent—by means of the complement-deviation test.

We desire also to describe our technic as thus far developed, and to tabulate the results obtained. Several details of the work are reserved for future communication.

When Bordet and Gengou[1] described the bacillus of whooping-cough in 1906, they used the complement-deviation test to control their bacteriologic findings. From this time on, it has been known that the blood of patients in the late stages of pertussis, during convalescence and for some time thereafter would give a positive test, showing definite deviation of complement. More recently it has been shown that in the later stages of atypical cases of pertussis, that is, paroxysmal cough without a whoop, it is possible to determine the specific pertussis character of the infection by means of this test.[2]

Several observers have denied the possibility of making a diagnosis of pertussis, even during the height of a typical attack or directly after convalescence by means of the complement-deviation test. Working in the Royal Serological Institute of Vienna, Bächer and Menschikoff[3] report that in twenty-seven cases of pertussis, moderate and severe, in the height of the attack and in convalescence, attempts were made to obtain positive complement-deviation reactions, without success in a single case. Only after vaccines, prepared from pure cultures of the Bordet-Gengou bacillus were given, was the test ever positive.

Commenting on these and other similar findings, Bordet[4] himself says, "I repeat that the power (of fixing the complement) is *not* seen early. In general, it does not show itself markedly till toward the period of convalescence or cure."

Netter and Weil[5] have reached practically the same conclusion. They find that the test is constantly positive by the end of the second week of the paroxysmal stage. In the catarrhal stage they were unable to obtain a positive reaction. Of sixteen cases examined during the first week of the whoop, not one gave a positive reaction. They therefore conclude that the test has no diagnostic value in the early stages. This would appear to be the consensus of opinion at this time. It should be noted here that Manicatide[6] has recently announced that he has secured positive complement-deviation tests in a series of cases, using as antigen a so-called Z-bacillus isolated by him. Confirmation of this assertion is apparently lacking, as are also details as to period of attack in which the positive finds occurred.

Our own results lead us to the opinion that the complement-deviation test is of the very greatest value in the diagnosis of whooping-cough. With the method we have used, it has been possible to make a diagnosis of pertussis in the catarrhal stage (subsequently confirmed by the clinical history). Nine patients were admitted to the hospital just as the children were beginning to whoop; that is, in the first days of the paroxysmal stage. Our test was positive in all of these cases.

It will be recognized that the early diagnosis of such a scourge as whooping-cough, particularly when occurring in institutions in which children are segregated in large numbers, is a matter of great importance. Again, it is a matter of record that the success of vaccine therapy depends in large measure on the time of its application. The earlier the vaccine is given, the better the results. If it be possible to diagnosticate whooping-cough in the catarrhal stage surely and definitely, its rapid cure seems assured.

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* From the laboratory of the Cincinnati Hospital, Dr. Paul G. Woolley, Director.

1. Bordet and Gengou: Ann. de l'Inst. Pasteur, 1906, xx, 731.
2. Bordet and Gengou: Centralbl. f. Bakteriol., Abt. 1, Orig., 1911, lviii, 573. Bordet and Brunard: Bull. Acad. roy. de méd. de Belge, 1910, xxiv, 320. Delcourt: Presse méd. belge, 1912, lxiv, 19.
3. Bächer and Menschikoff: Centralbl. f. Bakteriol., Abt. 1, Orig., 1912, lxi, 218.
4. Bordet: Centralbl. f. Bakteriol., Abt. 1, Orig., 1912, lxvi, 276.
5. Netter and Weil: Compt. rend., Soc. de Biol., 1913, lxxiv, 236.
6. Manicatide: Ztschr f. Kinderheilk., 1913, vii, 226.

Our technic for the test has been as follows: A small amount of blood was taken from the patient's ear, finger or toe in small test-tubes or the Wright capillary tubes.

This was kept at room temperature or placed in the incubator until coagulation had taken place. Serum was then separated more completely from the clot in the centrifuge. So far in our tests only the fresh active serum has been used. Two drops of the serum were used in each test.

Hemolytic System: The Noguchi system was used, because of its extreme delicacy, and because of the small amounts of material, especially serum, required.

Antigen: This is the most important factor in the test. The Bordet-Gengou bacillus was obtained in pure culture from the laboratories of Parke, Davis & Co. Most of our work was carried on with this culture. Cultures were also obtained from H. K. Mulford Company and from Dr. F. B. Mallory of Boston. The latter culture came from a strain grown at Theobald Smith's laboratory.

Subcultures were made on Bordet's medium, ascitic fluid agar and broth serum.

The antigen was made from seventy-two-hour growths in ascitic fluid agar in the following manner:

The colonies, which are very tenacious, were washed off the agar with sterile salt water. An emulsion was made, and the bacteria again washed in salt water. From this a standard suspension was made and 0.1 and 0.2 c.c. of this used in the test. Throughout the tests, live bacteria were used.

Controls: In each test known normal and known positive controls were used. In each series of tests the hemolytic system was tried out in the usual manner, using a water-bath at 37 C. for incubation. After primary incubation for half an hour, the amount of amboceptor indicated by the preliminary test was added to our final test-tubes, and the tubes again incubated in the water-bath. Final readings were taken within the following hour.

In every instance, independent readings were taken by each of us, always without previous knowledge of the clinical history of the given case.

Our results are given in the accompanying table.

RESULTS OF COMPLEMENT-DEVIATION TESTS FOR WHOOPING-COUGH

	No.	Positive	Negative	Percentage
Cases whooping........	18	18	0	100
Normals	8	0	8	100
Early Cases (catarrhal stage)	3	2	1	66.6
Not whooping, but course otherwise typical.....	1	1	0	100

While this is to be considered as a preliminary report, purely, we wish to call attention to the following details:

1. The antigen must be fresh. In each instance we have used seventy-two-hour growths on ascitic fluid agar.
2. We have invariably used active antigen.
3. We have always used fresh active serum.
4. Our material has been drawn for the most part from cases in our own wards at the Cincinnati Hospital. This will explain why we have not had more cases in the catarrhal stage, as the children are usually not admitted before the onset of the paroxysmal stage. In this connection, however, it is of interest to note that nine of our positive cases were in the first week of the whoop, and three early in the second week, as shown by our carefully recorded clinical histories. Every case examined in the paroxysmal stage has given a positive reaction.

In no case have we had a positive reaction when the patient has not had either a pertussis infection or a history of pertussis within four years.

The one case, in the catarrhal stage, which did not give a positive reaction, was tested at the very beginning of the cough. The other two cases in the catarrhal stage, both giving positive reactions, occurred in the private practice of one of us. Both of these children subsequently developed typical attacks with pronounced whoop.

We are now beginning the study of early cases (catarrhal stage), using as material cases with cough as seen in the children's clinic of the medical department of the University of Cincinnati. In this way we hope to be able to report on a larger series of early cases in a subsequent communication.

It is a pleasure to express our thanks to Dr. W. B. Wherry, professor of bacteriology, University of Cincinnati, for many helpful criticisms and suggestions.

4 West Seventh Street.—3104 Jefferson Avenue.

THE GENERAL ACTION OF QUININ IN THE TREATMENT OF AMEBIC DYSENTERY

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Of the many drugs advocated in recent years for the treatment of amebic dysentery, undoubtedly ipecac and quinin have been by far the most popular and successful.

Vedder, in some interesting and instructive experiments, carried out in Manila in 1910 and 1911, proved conclusively that both of these drugs have a powerful amebicidal action on water amebas *in vitro;* hence it is logical to conclude that their use in the treatment of amebic dysentery is based on a rational principle. In these experiments Vedder found that emetin (alkaloid) killed amebas in dilutions of 1:100,000, and that the fluidextract of ipecac acted similarly in dilutions of from 1:10,000 to 1:50,000, according to the preparation employed. Subsequently he ascertained that the amebicidal action of ipecac varied directly with the alkaloidal content present in the preparation utilized. In powdered ipecac—the preparation usually given in the treatment of dysentery—the amount of alkaloid present ranges from 0.33 per cent. to 2.5 per cent. The standard of the Pharmacopeia is 1.75 per cent. A probable reason for the discordant results obtained by the various physicians in the treatment of dysentery with ipecac is thus discovered. Quinin sulphate killed amebas in dilutions of 1:20,000, and silver nitrate in dilutions of 1:300,000.

Unfortunately, the pathogenic entamebas cannot at the present time be grown on artificial culture mediums, consequently their lethal factor to the above-mentioned drugs cannot be accurately determined, and even if such were the case it is fully appreciated that identical results would not necessarily occur *in vivo*. Until we are able to conduct experiments along lines more closely resembling the conditions found in disease, however, it is believed that the preceding experiments may be used as a guide in the treatment of dysentery.

After reading Vedder's paper, Rogers tried emetin hydrochlorid hypodermatically, in the treatment of amebic dysentery, and reported six or seven cases in which prompt and decisive results were obtained. Since his article appeared, many authors have corroborated Rogers' work.

In a somewhat extensive experience with amebic dysentery during the past twelve years, I have employed many drugs in its treatment; and, on clinical grounds, came to the conclusion that in a majority of cases ipecac was by far the most successful. As is the case with many other remedies, I also ascertained that the earlier ipecac was employed, the more promptly and permanently did the disease respond to treatment.

During my last tour in the Philippines, ten out of twelve new cases treated with ipecac did not relapse during a period of from six to eighteen months that they were under observation. Nearly all of the patients treated by me in the United States have had two or more attacks, and in these chronic cases relapses are by no means infrequent. During the past year I have used emetin hydrochlorid in the treatment of eleven of these old cases of amebic dysentery. Only about one-half of these cases have responded promptly to treatment, but all of them have improved, and no doubt some of the others would have yielded to persistent medication. The average quantity of emetin administered has been 65 mg. (1 grain) twice a day. In some cases as much as 130 mg. (2 grains) have been administered at a dose, but few patients can take such large amounts without considerable depression following.

The incomplete success obtained in some of these cases and my inability to secure emetin at all times induced me to try the general action of quinin. The local action of quinin by enema I had tried many times with only indifferent results. From the action of emetin given hypodermatically in dysentery, and from the promptness with which I have seen draining amebic abscesses of the liver heal after a course of ipecac by mouth, I concluded that even in amebiasis of the colon it was the general and not the local action of the emetin that cured dysentery, and hence it would be entirely logical to expect that the general action of quinin in the same disease would be more important than its local action. This view is further fortified by the fact that silver nitrate, which is three times as potent an amebicide as emetin and fifteen times as potent as quinin, has not been so valuable an agent as either of the other remedies in combating this disease. When given by enema, some of the silver is, of course, precipitated as the albuminate and the chlorid, but even after making due allowance for the loss sustained in this way, its action cannot be compared to that of emetin or ipecac. I am of the opinion that whatever benefit has followed the use of quinin enemas in dysentery has been due to the mechanical cleansing of the colon, and to the amount of the drug absorbed. I recall two patients successfully treated with quinin irrigations who complained of symptoms of cinchonism after nearly every treatment. The amebas in the lumen of the intestine should be promptly killed by an irrigation; but the harmful ones, the ones buried in the abscess walls and in the burrows radiating from them are probably affected only by that portion of the drug absorbed, which, in the majority of cases, must be only a fraction of the amount dissolved in the enema.

The second point that induced me to try the general action of quinin in the treatment of dysentery is that if emetin is amebicidal in dilutions of 1:100,000, and quinin in dilutions of 1:20,000, the latter drug should be just as efficient or even more so, since it can be given in from five to ten times as large a dose as the former alkaloid. A third point is that cases that resist ipecac may develop an emetin-fast strain of parasites that might succumb to quinin. The converse of this should also be true.

With the preceding ideas in mind, I began employing quinin sulphate in doses from 1.5 gm. (22 grains) to 2 gm. (30 grains) per day by mouth. In some of the cases I gave 0.6 gm. (10 grains) in capsule three times a day, usually for a period of six days. The treatment was then discontinued for one week and subsequently repeated. If a patient complained of annoying tinnitus aurium, he was given 0.6 gm. with the evening meal and 1 gm. on retiring, with equally satisfactory results and with a minimum of discomfort from the action of the drug. I have now treated ten chronic cases with most encouraging results. In all of these the amebas have disappeared from the stools within a few days, and the symptoms have improved. In several of the cases, one or more relapses occurred, and in one case, while the parasites disappeared temporarily, they would invariably return, usually as encysted forms. The last case cited resisted ipecac by mouth, emetin hypodermatically, ipecac, quinin and silver irrigations, bismuth and milk, and rest and special diet for a period of six months, and the patient was finally discharged uncured. I have no doubt that some of the patients now apparently cured will subsequently relapse. But this result occurs under any method of treatment with any one who sees many cases. I regret that I have not had an opportunity to try the general action of quinin in acute and early cases, as one would naturally expect better results before extensive or chronic ulceration occurred. On the other hand, I realize that only experience can determine this point.

While I have not resorted to the hypodermatic administration of quinin in the treatment of dysentery, I would not hesitate to do so if the patient failed to retain or absorb the drug, when given by mouth. Both quinin and emetin are irritating when given hypodermatically, but emetin appears to be less so; hence, under the above circumstances I would prefer to employ the latter alkaloid.

CONCLUSIONS

1. In the early stages of entamebic dysentery, ipecac, or preferably its alkaloid, emetin, given hypodermatically, would appear to have a specific action on the disease.

2. In chronic cases, ipecac is a valuable remedy and will cure many patients, but not with the promptness and certainty that it does in the acute phases of the disease.

3. Quinin sulphate by mouth in doses of 2 gm. per day would appear to be as efficient as ipecac in the treatment of entamebic dysentery.

4. Quinin is always available, is much cheaper than emetin, and, in most cases, can be given with less discomfort to the patient than ipecac or its active principle.

Letterman General Hospital.

PSEUDOPANCREATIC CYSTS

WITH A REPORT OF FOUR CASES

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In discussing pseudopancreatic cysts one is tempted to take issue with the term as applied to the existing pathologic condition. The condition is essentially a collection of fluid in the lesser peritoneal cavity, and not a true cyst, and only resembles a pancreatic cyst in that the fluid sometimes contains the pancreatic ferments. The old term of traumatic cyst of the pancreas, as first used by Küklenkampff and Senn, is of course erroneous. for it is in no sense a true cyst, nor is it directly connected with the pancreas. A truer and more descriptive term would be, "an accumulation of fluid in the lesser peritoneal cavity as a result of trauma to the pancreas."

Küklenkampff's case, reported in 1882, is the first case observed and reported in the literature, and this was considered a true cyst of the pancreas. This was followed by Senn's classic paper, with a report of a case, which appeared in 1885. Senn recognized that, because of its slight protection and its rather exposed location when the stomach and colon are empty, the pancreas is susceptible to injury. He was, however, unable to find in the literature any allusion to stricture of the duct as a result of trauma. He stated that "the clinical history of several rapidly growing cysts tends to prove that obstruction of the duct occurred in this manner."

A careful survey of the history of Senn's case convinces one that he was dealing with a collection of fluid in the lesser peritoneal sac and not a true cyst. He assumed that the condition was a retention cyst caused by a trauma to the duct, with subsequent fibrosis and occlusion. He attempted to produce the condition by animal experimentation and failed. He explained the blood in the fluid in several possible ways. Fenger, in 1887, and Steele, in 1889, reported cases as true cysts of the pancreas following injury, both of which were probably pseudocysts.

Jordan Lloyd was probably the first to recognize and describe the true pathology of this condition. He reported two cases, one of which was fatal, and was subjected to necropsy. The other patient was operated on and the exact pathologic anatomy noted. In both of his cases the fluid contained pancreatic ferments.

In 1895 Leith collected seventeen cases from the literature, including the ones reported by Küklenkampff, Senn, Kuester, Fenger, Steele and Richardson. Many of these seventeen cases were considered true cysts, but Leith believed them to be pseudocysts.

A brief review of the anatomy of the lesser peritoneal cavity shows that it varies in size within rather wide limits. It lies below and behind the stomach, the gastrohepatic omentum and the anterior layer of the great omentum. It is directly in front of the pancreas, and the peritoneum is closely adherent to this organ at this point, not being separated from it by any considerable layer of fat, even in fleshy people. This is to be noted as an essential factor in a consideration of the pathogenesis of pseudocysts following trauma.

The lower boundary of the sac is formed by the upper layer of the transverse mesocolon. Laterally, it extends from the hepatic to the splenic flexures of the colon. The right limit is formed by the folding of the peritoneum to form the foramen of Winslow. The left limit is the hilum of the spleen. The upper limit is formed by the diaphragm and the liver. The spigelian lobe of the liver is the only part of this organ that lies free in the cavity. The colon lies below the cavity.

Lloyd found when the cavity was distended with plaster of Paris that the greater bulk was found deposited in the hollow to the left of the spine, which would tend to explain the prominence of the tumor at this point when the sac is distended with fluid. In considering trauma as an etiologic factor in producing a distention of this lesser sac, one must recognize that an inflammation from any cause which involves this portion of the peritoneum is capable of inducing the same effect. Trauma to the abdomen, particularly crushing injuries across the upper part, can readily impinge the pancreas against the spine and lacerate it extensively, for if the stomach and colon are empty, this organ is not well protected.

It is now conceded that such an injury will so tear the overlying peritoneum and crush the pancreas beneath it so as to allow an escape of pancreatic secretion and blood into the lesser peritoneal sac, producing an inflammation which results in a plastic exudate capable of closing the foramen of Winslow. With a continuation of this process a distention of the cavity is inevitable. It has been thought that fluid might collect between the peritoneum and pancreas following injury, but this does not seem probable. A severe trauma was inflicted on the upper abdomen in each of the four cases here reported.

Fat necrosis has been observed in many of the reported cases, which resulted from an escape of pancreatic secretion through the foramen of Winslow before it closed, or from a flow along the lymphatics. Two of the cases here reported showed fat necrosis.

The fluid found in the reported cases has shown pancreatic ferments in a considerable number of them, the fat-splitting and sugar-reducing ferments being the ones usually found. The amount of ferment found is dependent on the extent of laceration of the pancreatic tissue, and relatively on the quantity of fluid exudate within the sac, causing a dilution of the escaping pancreatic secretion. The fluid from two of our cases showed pancreatic ferments.

In considering the diagnosis of a collection of fluid in the lesser peritoneal sac due to trauma, one is impressed with the similarity in the nature of the injury that occurred in a majority of the reported cases. While it is recognized that the pancreas is a deep-seated organ and fairly well surrounded by protecting tissues, yet it rests directly on the spine, and if the stomach and colon are empty and the anterior abdominal wall thin, as it is in children, then the conditions favor an injury to the pancreas from any blow or crushing force which will thrust the gland against the firm vertebra.

Three of our four patients were children, and all of them sustained their injury by being run over by a wagon. The fourth was an adult, who had received a sudden sharp blow in the upper abdomen. He was a porter on a sleeping-car and was thrown violently against a seat in a railroad wreck. The history is, therefore, of great value in arriving at a diagnosis.

The subsequent clinical course in all these four cases is strikingly analogous. Each case gave a history of rather severe abdominal pain, with nausea and vomiting immediately following the accident. None of the cases were seen on the first day, so the amount of shock cannot be estimated. Two of the cases were seen on the second day, and both had a temperature from 100 to 101 F., with a slight acceleration of pulse-rate. This continued until operation. There was some tenderness and slight muscular rigidity over the epigastrium. These symptoms continued until the appearance of the tumor, which was first observed in one case ten days after injury, and in the other twenty-three days after the accident. It is probable that in the latter case the tumor had existed a number of days before being discovered. In the other two cases it was first noticed in twelve days and three weeks, respectively, after the trauma. In practically all the recorded cases it is noted that the tumor made its appearance between ten days and four weeks subsequent to the trauma. It is our conviction that a mass can be made out in all cases in eight or ten days, if carefully searched for. The three of our four cases which occurred in children presented a smooth globular mass just to the left of and above the umbilicus. This mass protruded from beneath the left costal arch, and was firm in consistency, giving a sense of fluctuation.

Distention of the stomach and colon with gas demonstrated the mass between these two organs. There seemed to be slight movement with respiration.

The fourth patient was a colored porter, and he had received his injury about three months before coming to the Post-Graduate Hospital. He gave the history of having first noticed the "swelling" about three weeks after his accident. The tumor mass was larger, firmer and more fixed than the other three cases, and occupied the entire epigastrium, being a little more prominent to the right of the median line. When the stomach was distended with gas it was found lying over and below the most prominent part of the mass. It seemed fixed to the anterior abdominal wall, between the umbilicus and the right costal arch. When the lesser peritoneal sac becomes distended with fluid it may approach the anterior abdominal wall between the stomach and colon, which is the usual location, or below the colon, or above the stomach, through the gastrohepatic omentum. In three of our cases the mass was found between the stomach and colon, and in the fourth above the stomach.

In each of the four cases there was a moderated leukocytosis with a slight increase in the polymorphonuclear cells.

It is unnecessary to add that an exploratory needle was not used in any of the cases.

In the first two cases seen a positive diagnosis was not made, one of them being the case of the adult, which had existed for three months; the second two seemed so typical that we ventured a rather positive statement as to the condition.

In taking account of the evidence which makes for a diagnosis, a consideration of the manner in which the injury to the upper abdomen was inflicted is all-important. Crushing injuries, such as a wheel passing over the abdomen of a child, are probably the most frequent cause.

The appearance of a cystic tumor ten or twelve days after such an injury, protruding to the left and above the umbilicus, lying between the colon and the stomach, and accompanied by a slight amount of pain, tenderness and elevation of temperature, make the diagnosis of a collection of fluid in the lesser peritoneal sac most probable.

The four cases here recorded were treated by incision and drainage. In the first case, the adult with the history of three months' duration, in which the cystic mass appeared above the stomach, the sac was found adherent to the anterior abdominal wall, and was opened without entering the general peritoneal cavity. No fat necrosis was observed, but the fluid was seropurulent, and contained pancreatic ferments. It was not blood-tinged.

In the other three cases there was a protrusion between the stomach and the colon, and the free peritoneal cavity was first walled off with gauze and the sac opened and drained. In two of these cases the fluid was blood-stained, and both showed a moderate amount of fat necrosis. There was no serious amount of excoriation of the skin in any of the cases, and the sinuses closed rather rapidly and without any unusual incident. All four patients made a complete recovery.

104 South Michigan Avenue.

CHRONIC RETENTION OF THE URINE

TWENTY-EIGHT YEARS OF CATHETERIZATION *

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Retention of urine in the male, due to enlarged prostate, requiring years of catheterization, is a rather common occurrence; but there are few instances in which actual and continuous catheter life has extended over more than ten or fifteen years. Moreover, after a careful search of the literature, I was unable to find a single reference to any condition of the genito-urinary apparatus of the female demanding daily use of the catheter, especially for the unparalleled period of twenty-eight years. It seemed, therefore, that the following case might be of interest:

Mrs. P., married, aged 42, a housewife, of fair complexion, excellent physique and a negative family history, entered the Peoples Hospital on account of the distressing condition of having to draw the urine from four to five times daily. For the past twenty-eight years she had never, to her knowledge, passed a drop of water, except through a catheter. There was no history of any other previous illness of any consequence, and no injury to any part of the body, especially the spinal column. The reflexes were normal. Syphilis was easily excluded. Menstruation had always been regular and free from pain. She had one child who is well. This labor was normal, except for the necessity of catheterization, as before. I was not able to ascertain why the bladder condition was not investigated after recovery from childbirth.

At the age of 14, having previously been perfectly well, she was seized with severe pain in the hypogastric region, which grew rapidly worse, with inability to void urine, though the desire to urinate was frequent and attended with great distress. All the ordinary measures known to be helpful on such occasions were tried without benefit. A physician was then called who relieved the retention, and sent the patient to a hospital, where treatment covering several weeks was carried out. She was not again able to urinate, however, and as the acuteness of the attack subsided, catheterization was still continued. No conclusion as to the cause of illness was arrived at. It is unnecessary to enumerate all the measures employed, from time to time, to relieve the condition. All were alike disappointing. At length, though greatly discouraged, the patient resolved to make one more effort, and came to the hospital for investigation.

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* Read before the Syracuse Academy of Medicine, Feb. 3, 1914.

Physical examination revealed essentially a normal person, except for the presence of urinary retention. The cystoscope gave no particular information as to the cause of the retention, but ruled out the presence of stone, tumor or lesion of the kidneys or ureters. There seemed to be a well-defined spasm of the internal meatus. The other pelvic organs were practically normal. The urine showed a mild chronic cystitis. The capacity of the bladder was about 3 ounces. Residual urine, if present, could not be detected, since the bladder was emptied only by catheterization. The natural desire to micturate had for years been replaced by severe suprapubic pain, and the peculiar sensation attending urination had long since disappeared. It was decided, therefore, to give the bladder rest. Meanwhile the patient's general condition was carefully studied with a view to correcting any existing neurosis. This was not followed by any perceptible change.

After the usual preparation, a suprapubic cystotomy was done, and the bladder drained for four weeks, the tube being removed in ten days. The internal meatus was found small and tense, and lacked the usual resiliency. This was no doubt one of the factors in the cause of retention, the detrusor muscle being unable to overcome the resistance. The bladder wall was considerably thickened, doubtless from fruitless efforts on the part of the bladder to evacuate its contents. Both ureteral orifices were normal in appearance. Both kidneys were functionating. Graduated steel sounds were passed into the bladder until the meatus accepted a 34 French.

After the suprapubic drain was removed, a permanent catheter was ingeniously tied in, and occasional doses of hexamethylenamin given, with free ingestion of water. The suprapubic drainage rapidly subsided, until eventually all the urine came through the catheter. This then was allowed to go on for a week, when the catheter was clamped off, allowing the urine to accumulate in the bladder for an hour, at which time the clamp was removed and the bladder emptied. At the end of another week, the patient was able to go two hours between evacuations. The time was soon lengthened to three hours, then four and five, until finally the bladder could retain 12 ounces of urine without distress. During this time, however, a complete change was taking place in the physiologic function of the bladder. Instead of the original unbearable hypogastric pain, there was the usual desire to urinate, not before experienced in twenty years. This desire was followed by a natural sense of relief after urination. The next step was to tie in a small catheter and clamp it, the object of which was to encourage the urine to escape around the catheter at stated times. It was soon noticed that this was taking place. The patient was now allowed to go to the water-closet every two or three hours and pass the urine, leaving the clamped catheter continually in place. This was done for a week. The result was very satisfactory to both the patient and myself. The urine was now in better condition, showing, of course, traces of chronic cystitis. The suprapubic incision being firmly healed, and the patient having quite well recovered from the operative procedure in general, the catheter was discontinued altogether, and has not been required since. Recovery was perfect.

Rest of the female bladder may be obtained by the use of a permanent catheter, and no doubt some will question the advisability of a suprapubic cystotomy in this case. But it was deemed necessary for two reasons. First, the long time over which the condition had existed called for diagnostic and therapeutic measures sufficiently radical to transcend in value those which had already been tried without result, and, secondly, assuming the probable presence of a neurosis, and considering the ill effects of habit and previous environment, it seemed best to follow a line of treatment not confined entirely to the urethra. The excellent results obtained go far to establish the wisdom of the course taken.

The cystoscope, in the diagnosis and treatment of disease of the bladder, is invaluable, and should always be given a trial unless there is some contra-indication to its use; but there are some unusual conditions of the bladder which one cannot differentiate without an exploratory incision. Suprapubic cystotomy is not usually a serious operation, and I believe that when it is done, a liberal incision is to be preferred. The skin and subcutaneous tissues are divided in the line of the sulcus, the recti muscles separated, and the space of Retzius traversed with as little traumatism as possible, and the bladder opened transversely, so that when the recti muscles are later brought together, the bladder incision, closed securely about the drainage-tube, is strongly reinforced. The tube is stitched only to the skin and should be removed early. Two drainage-tubes may sometimes be required. By means of the small diagnostic lamp, the head-mirror and the suction apparatus for frequent clearing of the cavity, the entire inner surface of the bladder may be explored easily. Complete recovery of the patient depends greatly on careful after-treatment, which permits no detail, however trivial, to be overlooked.

In closing, I wish to call attention to the original method of catheterization of the bladder after suprapubic cystotomy, more especially in those cases of retention in which, in the absence of any grave central lesion, the bladder mechanism, though intact, is held in abeyance, the patient having lost control over the act of micturition. Continuous catheterization is carried out by means of a full-sized catheter, until the primary incision is closed. The catheter is then clamped off, the bladder being relieved at short intervals by removing the clamp. These intervals are increased in length until the patient is able to retain the urine for four or five hours. A small catheter is then tied in, allowing the bladder to evacuate its contents, at stated times, around the catheter. The catheter is finally removed altogether, and the patient permitted to resume the normal act of urination.

803 East Genesee Street.

SYPHILITIC SORE THROAT DIAGNOSED AS DIPHTHERIA

SUBSEQUENT ERUPTION CONFUSED WITH SUPPOSED ANTITOXIC ERYTHEMA

Andrew L. Glaze, M.D., Athens, Ala.

The case detailed below is offered as nothing new. It is interesting, however, and will serve to help avoid one "diagnostic pitfall" of the many that wait for the unwary.

Mrs. W. R. G., housewife, aged 23, living in the country, married six years ago, has two children, the eldest aged 5. The last child was born Nov. 1, 1913. At this time, apparently, the mother was in perfect health, but labor proved to be difficult, requiring instrumental interference. The child seemed normal. The puerperal period was uneventful till the ninth day after delivery; on this date the patient was seized with a severe sore throat which grew progressively worse.

In view of the fact that sporadic cases of diphtheria had prevailed in the community during the fall (although there were none in the immediate neighborhood at that time) and in the presence of a white membrane in the throat, the family physician administered diphtheria antitoxin, 5,000 units. The members of the household were given immunizing doses. At the second visit no improvement was noted, so another dose of 5,000 units was given. During this day an eruption, vesicular and papular, began to show on the face and around the edges of the hair. The family was calmed by the explanation that the eruption was expected as a result of the action of the antitoxin. The light doses received by them did not produce similar symptoms. At a later date, local manifestations of the disease still proving rebellious, a third dose of 5,000 units was injected. Ten days later the eruption had become wide-spread, appearing all over the body. A different treatment was instituted, but the woman's people became dissatisfied, and the doctor in charge was dismissed.

Because of the fact that the patient's mother does not "believe in doctors," three weeks elapsed before another physician was called. At this time symptoms of an unusually malignant case of syphilis were in evidence. Complete anorexia, profound melancholia and weakness marked a serious condition. The characteristic eruption consisted of lesions as wide-spread and numerous as those which a severe case of discrete small-pox might exhibit. Iritis, ulcerative blepharitis and a mouth and throat as sore as that of the worst pellagra sufferer completed the patient's misery. (These symptoms are recited to emphasize what every case does not show so plainly, that the patient is injured more by a mistaken diagnosis than the doctor himself.) The Wassermann test was strongly positive. The woman's husband, confronted with the facts, admitted having become infected during his wife's pregnancy. He had been treated with salvarsan in a neighboring city.

CONCLUSIONS

Thorough physical examination when the physician was first called would have disclosed the fact that general glandular enlargement was present. This, combined with the throat described and with the elimination of the possibility of diphtheria by cultures, would have furnished food for thought.

The giving of antitoxin in the first place, it will be admitted, was justifiable. "When in doubt, give antitoxin" is a good motto.

The mistake in diagnosis, discovered later, should have been confessed to some member of the family, and the real nature of the malady divulged. This disease cannot be well treated without some measure of cooperation; in addition, the jeopardy in which one's reputation has been placed in instances of this sort can be minimized by thus making the best of a bad situation.

Death During Ether Anesthesia—Status Lymphaticus.—M. B., female, aged 3½, was admitted to the Montreal General Hospital on Nov. 12, 1913, for bilateral talipes valgus. She had been a premature infant (eighth month) and had been artificially fed. At the age of 18 months she had acute anterior poliomyelitis. In September, 1913, she underwent the operation of tonsillotomy under general anesthesia. At the time of her admission she appeared a well-nourished child and presented no signs of rickets. Examination of the heart and lungs was negative. The anterior and posterior cervical glands were palpable. There was no apparent enlargement of the spleen. The urine was normal. Nov. 15, 1913, she was given ether by the open method for a tendon-grafting operation. The course of the anesthesia was uneventful until the operation was nearly completed, that is, for about an hour. Breathing then became somewhat gasping in character, and within a minute ceased. Artificial respiration was immediately begun. Oxygen, camphor and strychnin were administered, but without success. Respiration was never reestablished. At the necropsy the following conditions were found: The thyroid gland was normal. The thymus gland was greatly enlarged especially on the left side. There was slight enlargement of the heart. The bronchial lymph-glands were hypertrophied and showed areas of caseation. A caseous gland was present in the posterior mediastinum in close contact with the branch of the left pulmonary vein from the lower lobe. The spleen was enlarged. Peyer's patches and the solitary follicles in the large intestine were enlarged and very prominent. There was hypertrophy of the mesenteric glands. The pancreas, liver, kidneys, adrenals and brain were normal.—W. B. Howell, M.D., Anesthetist to the Montreal General Hospital, Montreal, Canada.

ANKYLOSIS OF THE MANDIBLE

R. C. Creasy, M.D., Wilkes-Barre, Pa.

W. C., aged 13 years and 7 months, undersized and underweight, came to me for the first time Aug. 9, 1913, with a limited motion of the mandible permitting of but ¼ inch separation of the incisors and no lateral motion. At the age of 4 years and 2 months, while swinging, he fell 8 feet and struck his chin on the hard wood floor. As the child suffered intense pain and was unable to move the mandible, a physician was summoned. Palliative treatment was instituted, and the child fed through a tube for a period of two months. No attempt was made to use the mandible, and it ankylosed in the position I found it. Roentgenoscopy disclosed the condition to be a previous fracture of the ramus, the line of fracture running into the joint, and a mass of callous substance filling the joint.

Ether was administered and the limit of motion was still the same, thus eliminating the spasmodic condition of the muscles as being one of the causal factors for the limited motion. Under force with the use of two oral mouth-gags, the degree of force applied being the same, thus avoiding any lateral dislocations, I succeeded in an increase of the limited motion to 1½ inches; this form of treatment was carried out three successive times at intervals of one week. During the time intervening I permitted the boy to make good use of the oral screw. The results obtained by this procedure have been excellent.

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

TYPHOID VACCINE (See N. N. R., 1914, p. 259).

H. M. Alexander and Co., Marietta, Pa.

Typhoid Vaccine (Immunizing).—Prepared according to the method used in the U. S. Army Laboratory. The preparation is marketed in two styles of package: syringes and ampules, containing, respectively, 500 million, 1,000 million and 1,000 million killed typhoid bacilli. The injections are to be made at intervals of ten days.

B. B. CULTURE.—B. B. Culture is a pure culture of *Bacillus bulgaricus* said to be made from a desirable strain; marketed in bottles containing about 90 Cc. (3 fluidounces).

Actions and Uses.—B. B. Culture is intended for use in the treatment of intestinal indigestion and the various toxic and nervous effects arising therefrom; also for the enterocolitis of infants.

Dosage.—From 4 to 8 Cc. (from 1 to 2 fluidrams) three times a day in sweetened water before meals. For babies of any age 1 teaspoonful every three hours. The date of issue is stated on each bottle.

Manufactured by the B. B. Culture Laboratories, Yonkers, N. Y. No U. S. patent. U. S. trademark No. 90,535.

Brevity.—As a matter of fact we find that every really great writer tries to express his thoughts as purely, clearly, definitely and shortly as possible. Simplicity has always been held to be a mark of truth: it is also a mark of genius.—Schopenhauer.

Therapeutics

THE TUBERCULOSIS PROBLEM

(*Continued from page 983*)

PRETUBERCULOUS SYMPTOMS

The earlier we recognize the signs of probable or even possible tuberculosis, the better, as prevention is far easier than cure, though a cure is probable all through the first and second stages, and possible even in the third stage of the disease.

The conditions which predispose to this disease have already been enumerated. Besides correcting these conditions, we should use every means to build up the general system by tonics, outdoor life, change of climate, and by proper tepid or cold water sponging in the morning, which causes the skin so to react that colds are not readily acquired.

At a very early stage there may be no lung signs, and it may be impossible to determine whether or not the bronchial lymph-nodes are enlarged or diseased. There are loss of weight, more or less gastric disturbance, pallor, lassitude and vasomotor disturbances shown by cold hands and feet; or the latter may be intermittently very hot and dry. There is generally a history of progressive loss of weight, irregular chest pains, shallow breathing, dry cough, especially on deep inspiration, and, most important symptom of all, an afternoon or evening rise of temperature, not explainable by any tangible cause (although it must not be forgotten that occasionally such a temperature can be of nervous origin). Gastric indigestion, with loss of appetite, is often an early symptom of pulmonary tuberculosis. An anal fistula is generally secondary, and is not often primary to the lung lesion, and the discharge from it may contain tubercle bacilli, as well as staphylococci and streptococci. There may be some other chronic suppuration present, as a middle-ear catarrh. While anemia is generallv an early symptom, in the early stages there may be an increase in the number of the red blood-corpuscles. Amenorrhea, even without anemia, in girls and women is generally an early symptom; but women can complete one, or even two pregnancies while tuberculous.

While we are studying every symptom, and the lung symptoms are so few, to ascertain whether the patient really is tuberculous, a personal history of much sickness, especially colds, enlarged glands, chronic joint and tendon swellings or recurrent diarrheas, even if there has been no actual pulmonary consumption in the immediate family, renders the tendency, and hence probability of tuberculous infection, much greater.

In making the physical examination it should be remembered that it has long been decided that the flat, broad chest, contrary to previous belief, is less likely to be tuberculous than the rounded, barrel-shaped chest. Also, the chest circumference in the nipple line should measure anatomically half the height of the person. The expansion, unless the patient is abdominally obese, should be from 3 to 4 inches; 2½ inches is too small an expansion for a young adult. The inspection of the chest may show a lagging of one side during expansion, which may, however, be most noticeable with the finger-tips placed under the clavicles. This sign is very suggestive. The typical impaired percussion-note, imperfect breeziness of the inspiratory murmur, lessened depth, slight jerky inspiration, slightly prolonged expiration, slightly increased vocal resonance and localized râles, either dry or moist, with increased muscle resistance over a diseased area, with pleuritic pains in the upper part of the chest or between the shoulder-blades, are all too well understood to require elaboration. Very suggestive is the axillary, dripping perspiration during examination. Also suggestive is the little dry cough during the required increased inspiratory effort. This dry cough, hardly noticed by the patient, has probably been observed for weeks, if not longer, by the patient's family.

A study of the temperature of the suspected person is important; the temperature should be taken every three hours during the day for several days, or at least at 8 o'clock in the morning, at 4 in the afternoon, and at 8 in the evening, if not more frequently. A recurrent rise of temperature in the afternoon or evening, without any assignable cause, is almost pathognomonic of a latent tuberculosis becoming active. Some patients who show no temperature at rest will have quite a rise of temperature on the least exercise. Temperatures taken under the tongue are not so accurate as when properly taken in the axilla. Many a patient whose temperature is normal by the mouth will be found to have a higher temperature in the axilla. Of course, the most accurate is the rectal temperature, but this is rarely necessary for the diagnosis. An increased pulse-rate, over a hundred; with or without rise of temperature, is very suggestive, and if the pulse-rate is higher than the temperature would call for, the likelihood of tuberculosis is increased.

A slight hemorrhage of arterial blood always causes the laity to suspect phthisis, and the suspicion is quite generally correct. Hemorrhages can occur from the blood-vessels of the throat and larynx, although they are generally very small in amount, and most frequently venous, and many a patient has been condemned to treatment for tuberculosis on account of a perfectly simple throat hemorrhage.

The occurrence of typical night sweats, that is, cold sweats toward morning, is a frequent and suggestive symptom of tuberculosis; but patients who have been weakened by illness, overwork, or overexertion may have this symptom for a short time, though it should always create suspicion.

A rarely noted symptom of tuberculosis, which mav occur early in the disease or not until later, is atrophy of the mammary gland on the affected side; also, the hand and foot may be colder on the side affected, or if they are hot and dry, may be warmer than on the other side of the body. Conjunctivitis, blepharitis and an inequality of the pupils, with dilatation of the pupil on the same side as the affected lung, have been noted. The skin of the tuberculous patient is often dry, and may be rough and sallow; there may be increased pigmentation, especially around the nipple on the diseased side, and there may be chloasmic spots. Bright red spots on the cheeks, and the glistening eyes occurring in the late afternoon, with the hands dry and hot, are almost pathognomonic. At other times of the day there is pallor, with the veins prominent all over the body; the face looks sad, and there is languor and a rapid, collapsing pulse. These are all signs that may occur at an early period.

Before deciding that the sputum of a suspected patient, or a patient who has incipient tuberculosis, is free from tubercle bacilli, several examinations must be made. The sputum may be found free from bacilli on several days, and then on the last day of the examination found to be loaded with them. The number of bacilli found has no great bearing on the prognosis of the disease. On the other hand, if large numbers of tubercle bacilli continue to be present after considerable periods, probably cavitation is either present or developing. The prognosis can hardly be made from the character or appearance of the tubercle bacilli, although it has been thought that large numbers of the smaller tubercle bacilli show greater activity of the disease.

A fluoroscopic examination of the chest will often reveal, even before clouding of any portion of the lung occurs, a diminished excursion of the diaphragm on the affected side. This is very suggestive of tuberculosis. Roentgenograms may show areas of beginning lung trouble as well as diseased bronchial glands. Besides the skin tuberculin tests, the conjunctival test and the interdermal test, all of which are more or less reliable, a positive diagnosis can generally be made by injecting the original tuberculin subcutaneously.

A number of substances can produce a reaction in tuberculous patients similar to that from tuberculin. Nucleoproteins, cinnamic acid and some alkaloids can do this.

The tuberculin used in making the test for tuberculosis is a purified extract prepared from tubercle bacilli. The details of its preparation need not be described here. Its injection causes a leukocytosis and stimulates the production of ferments, especially in the cells and tissues immediately surrounding the tubercles. These ferments then act on the poisons that have been produced by the tubercle bacilli and have accumulated in the tubercles.

The fever reaction is due to the toxins set free from the tubercles and to the action of the enzymes on these toxins. If some form of tuberculin is used for curative purposes, the reactions will become less and less, as more of these sealed-in toxins are set free. Also, reaction may be less as the system becomes less sensitive and hence immune to the irritation of these toxins. It can readily be seen that if too large doses of tuberculin are administered, either as a diagnostic test or as a curative treatment, such a large amount of these toxins might be liberated as to cause an intense fever reaction, to the disadvantage of the patient. Also, it is quite possible by such treatment to liberate live tubercle bacilli and cause general infection. Hence the greatest possible care should be exercised in using tuberculin, either as a test or as a treatment, and the first doses should be of minimum amounts.

As tubercle bacilli are not readily killed by leukocytes, the latter surround the mass of bacilli and disintegrating and caseous material; the resulting lesion is called a tubercle. The fight, then, of enzymes and toxins goes on between the two opposing factions. Some of the leukocytes and some of the bacteria die, with the production of toxins and enzymes. If these are liberated by the local inflammatory process the fever reaction and the other concomitant symptoms occur in the person if sufficient amount of the toxin circulates in the blood. Every tubercle that breaks down and is evacuated into the bronchial tubes and expectorated, is a step toward recovery. This satisfactory process, however, cannot go on without a general disturbance of the patient, with loss of appetite, loss of weight and emaciation, and it becomes a question whether the person can stand the disease until the tubercles are evacuated, and whether or not such evacuation will produce cavitation. The object of a tuberculin treatment is to aid the patient slowly to eliminate his tubercles when the disease in him has come to a standstill, and he shows no tendency to recovery, even if he is not growing worse. The theoretical object, then, aimed at by treatment is the elimination by the patient of most of the tubercles, or the permanent encapsulation of those not eliminated by such fibrous and calcareous material as will cause them to be forever outside of the body, as far as any relationship to the blood and lymphatic circulation is concerned. On the other hand, if too many tubercles are broken down at once, too persistently or too continuously, the prognosis is bad, and tuberculin is ordinarily not indicated.

Our conclusions as to the subcutaneous tuberculin test may be as follows: 1. It is a reliable test, and is pathognomonic in children and young adults. In older adults, if the test is positive, it may be relied on as showing a tuberculous focus somewhere, but if the test is negative it is not so reliable as in children. 2. It should not be used carelessly, though perfectly safe if the beginning dose is small. 3. The tuberculin test is unnecessary when a localized pulmonary lesion has been discovered by physical examination. 4. When we recognize that a patient is tuberculous or is liable to become so, although we find no physical lesions, the tuberculin test is unnecessary, as our preventive treatment should be the same whether reaction is positive or negative. 5. In doubtful bone, tendon or joint inflammations, or when for any reason a decision must positively be made, the tuberculin test should be used.

Although a reaction from tuberculin has occurred in cases of carcinoma, syphilis and actinomycosis, still, these instances are so rare that there is the probability that such patients had a latent tuberculosis, and hence the test may be considered positive. In advanced cases of tuberculosis, however, the test may be negative on account of a tolerance to the toxins already described.

The beginning dose of "old tuberculin" for diagnostic injection is 0.1 mg., the second dose should be 1 mg., the third may be 3 mg. and the fourth 5 or 6 mg. Of course, a reaction occurring with any dilution would prevent the necessity or advisability of giving another injection. A suspected patient not reacting to 5 or 6 mg. should be considered free from tuberculosis.

If a physician desires, he may receive direct from the serum and bacterin firms the "old tuberculin" properly diluted for the diagnostic test.

Tuberculin triturates and tuberculin vaccines have been administered by the mouth as a possible treatment of tuberculosis, but such administration is as yet purely experimental.

The tuberculin injection test should be used only with a patient who is at rest and does not have a morning rise of temperature as shown by a series of observations. The injection should be given at about 9 p. m., and if there is a rise of temperature in the early morning, it should be considered a positive reaction, and if there is pain, swelling or heat discovered at an external suspected area, as a joint, or if there is congestion or moist râles are discovered in a suspected area of lung-tissue there is a "focal reaction." If there is a marked reaction at the region of injection (the "local reaction"), even if there is no general reaction, the patient probably has tuberculosis, and it may often be unnecessary to continue the injection of higher dilutions.

The "intradermal" tuberculin test for the diagnosis of latent or concealed tuberculosis (first described by Mantoux and Hutinel[1]) has been recently revived and recommended by Jeanneret.[2] The advantage of this test over the von Pirquet and the Moro skin tests is that a known amount of tuberculin is injected between the layers of the skin. The reaction is a local one, and there is no general disturbance like that occurring with the subcutaneous tuberculin test.[3]

A valuable diagnostic test, and also of considerable prognostic value, is the determination of the presence of albumin, and its amount, in sputum. Albumin is generally present in all sputa of tuberculous origin, and it is considered that persistent absence of albumin from sputa shows that its source is non-tuberculous. For a discussion of this subject and a simple method of making the test see article by Holm and Himmelberger.[4]

PROGNOSIS

In the first place, as to the probability of cure of tuberculosis, it should be remembered that statistics of necropsies show that from 30 to 35 per cent. of patients who have died from causes other than tuberculosis show evidence of that disease, either healed or latent. In general, the prognosis of pulmonary tuberculosis is modified by the family history, by the causes which have allowed the tuberculosis to develop, by the whole general condition of the patient, and by the amount of lung-tissue involved. A tuberculous process that begins in the lower part of the lung, following a pneumonia, gives a bad prognosis. A generally debilitated and anemic condition will necessarily slow or preclude a cure. An associated laryngeal or intestinal complication makes the prognosis very serious.

When a patient is first seen, the prognosis should be guarded, as it is only after weeks or months that the decision can be made as to how much this patient may improve, for even a person who looks otherwise well, except for the fact that tuberculosis is discovered, may develop an acute form of the disease. The physician should individualize the patient, not only as to his surroundings and his occupation, but also as to his mentality. His disposition should be studied. It is a mistake to send a patient to a sanatorium who will be restless under sanatorium restrictions, or who will be so seriously homesick as to lose his appetite, or who will not at all obey instructions. Therefore, the mentality, the individuality and the willingness to cooperate of the patient is of great importance in the prognosis. On the other hand, even a child from 1 to 2 years of age who becomes tuberculous need not necessarily die of the disease. It is possible for children seriously affected with more or less general tuberculosis to recover. It is stated that 80 per cent. of children infected before the age of 1 year will die, while not more than 20 per cent. of those infected after 2 years of age will die.

It is a question whether asthma, which was long supposed to protect against tuberculosis, really does so. Certainly an asthmatic patient could have tuberculosis. It seems to be a fact that persons who suffer from heart-disease, especially if there is sufficient loss of compensation to cause more or less dyspnea and pulmonary passive congestion, do not have tuberculosis so readily. This subaeration may interfere with the growth of tubercle bacilli.

Tuberculosis of the cervical lymph-nodes may be due to an auto-infection. In other words, bacilli may be contained in the patient's own sputum, infect the tonsils and be there carried to the cervical glands.

A more or less continuously rapid pulse gives a bad prognosis. A temperature that is not greatly lowered by rest gives a bad prognosis. Of course, the case is serious as long as there is a morning fever. A patient whose temperature is normal or subnormal in the morning, even if there is considerable rise in the afternoon and evening, may not only improve, but may recover. Any sexual excess, and even any sexual act during tuberculosis will aggravate the condition. A slight gain in weight, while desired and looked for, and generally an indication that the patient is improving, is not necessarily a positive indication that the prognosis is absolutely good, as many instances occur in which the patient gains weight for a time, under proper treatment, but the disease progresses. Therefore, a slight but steady gain in weight should be considered satisfactory, but should not cause too favorable an opinion of the outcome to be given.

It is considered a good prognosis when the lymphocytes in the blood are increased in number, showing that the nutrition is improving. It has also been considered that a normal number of eosinophils gives a good prognosis, while an absence of eosinophils gives a bad prognosis. Whatever the condition, however, it should constantly be borne in mind that pulmonary tuberculosis is curable in the first and second stages, and a cure may even take place in the third stage, or when there are cavities.

Reyher[5] has found a coincidence between orthostatic albuminuria and tuberculosis. He investigated twenty patients suffering from this condition of orthostatic albuminuria, and found a hereditary taint, enlarged cervical glands, enlarged bronchial glands and reaction to the tuberculin test in all of them.

Pregnancy in a tuberculous patient makes the prognosis bad, and should call for a consultation to decide as to whether or not abortion should be produced.

(To be continued)

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[1] Mantoux: Bull. de l'Acad. de méd., Paris, Oct. 27, 1908.

[2] Jeanneret: Rev. méd. de la suisse romande, 1913, No. 5, p. 373.

[3] This test is reviewed in the American Journal of Diseases of Children, January, 1914, p. 62.

[4] Holm and Himmelberger: The Quantitative Determination of Albumin in Sputum with Potassium Ferrocyanid, The Journal A. M. A., Jan. 3, 1914, p. 20.

[5] Reyher: Monatschr. f. Kinderh., 1913, xii, 2, p. 82.

Bibliography on Eugenics.—The educated man, as Oliver Wendell Holmes observed, is not one who knows everything but one who knows where to find what he wants to know. For this reason bibliographies, reference lists and other forms of concise information are always welcome. Probably no other subject has aroused the amount of general interest during the past year that has been given to eugenics. This word has been used in every possible sense, in many cases with little accurate knowledge on the part of those using it as to its meaning or limitations. Probably on no other topic has The Journal received so many requests for information. The publication by the State Board of Charities of New York of a bibliography on eugenics and related subjects under the designation of Bulletin 3 is therefore welcome. According to the compilers only such books are included as throw some light on eugenics and cognate subjects. The titles are arranged under twenty-seven subdivisions. The high standing of the New York State Library, in which the compilation is made, is ample assurance of the exhaustiveness and accuracy of the bibliography. Those interested in this field will be quick to appreciate the value of this compilation.

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SATURDAY, MARCH 28, 1914

FOOD CUSTOMS AND DIETARY CLAIMS

In discussing the extremes of nutrition that may be cited as illustrations of the ability of the human organism to adjust itself satisfactorily to enforced departures from what is customarily regarded as the rational dietary standard, we referred, not long ago, to the case of the Eskimos.[1] These people, at times, indulge in the habit of stuffing themselves to the utmost with food rich in protein and derived exclusively from the animal kingdom. Their extravagant dietetic habits in this direction are not chargeable with any immediately serious consequences; and some of the supposed virtues of the ration so rich in protein have even been extolled in recent writings on nutrition.

The time has come when those who write the newer chapters of this science must display due caution. As a prominent investigator has lately remarked, it is well to refrain from opening new channels for the baseless theories, fads and fancies with which the whole literature concerning the relations of food to health and disease is so flooded. The surest way to emphasize the necessity of serious reflection before any wide-reaching conclusions are promulgated on the basis of some report, accurate though it doubtless is, regarding the food customs of a group like the Eskimos, is to counterbalance it with reliable statistics representing the other side of the controversy. For this reason we refer to the equally uncommon case of certain Japanese bonzes, or Buddhist monks, who represent the acme of the extreme vegetarian cult. In an inquiry instituted several years ago by Yukawa[2] among two hundred persons, all of whom were reputed to have exceeded one hundred years of age, it appeared that about one-third of these had been accustomed to a diet preponderatingly vegetarian, the exceptions being in the nature of indulgence in fish once every week or two. Nearly half the subjects examined lived on a regimen derived exclusively from the plant world, even eggs, milk and animal fats being excluded. This record led Yukawa to undertake nutrition investigations on groups of the strictly vegetarian bonzes, both young and old, over a period of several months. The individuals, as a rule, are of rather small size and perform little hard work; but even with this consideration their food intake is surprisingly small. It consists largely of rice with some vegetables and radishes. The nitrogen balance was positive, so that there was no loss of tissue protein at the time of these studies. In extending them more recently, Yukawa[3] has furnished additional illustrative data showing a metabolism of less than 45 gm. (about 1½ ounces) of protein a day by persons weighing from 44 to 52 kg. (from 96 to 114 pounds). The utilization of the food was excellent, and the description of the nutritive condition of the individuals using this type of diet contrasts with the extremely unfavorable reports of McCay[4] regarding some of the races of India, which exist on a low plane of protein nutrition and likewise depend on food of plant origin.

It is not our desire here to review the vigorously debated questions suggested by reports of high and low protein, mixed and vegetarian systems of diet, respectively. We wish merely, by furnishing examples of the extremes of possibility in human nutrition, to protest. in this indirect way, against the habit, even among physicians, of hasty generalization in giving dietary advice. It is in a sense true, as Sir Lauder Brunton has written, that the subject of food is one on which countless experiments have been made by myriads of men during thousands of years. It may also be admitted that in all parts of the world, from prehistoric times until the present, men have been constantly engaged in finding out what things were good to eat and what things it is best to avoid. But it has remained for the present generation to put the study of dietetics on a scientific footing. We must give its newer knowledge a chance to assert itself with the same critical reserve that obtains in other successfully cultivated fields of endeavor.

THE PRODUCTION OF CEREBROSPINAL FLUID

Lumbar puncture has become a widely practiced procedure on man, for both diagnostic and therapeutic purposes. It is, therefore, incumbent on scientific medicine to inquire, more minutely than has been done hitherto, into the physiology of the cerebrospinal fluid — to consider the mechanism of its secretion, its functions and the course of its movements in the body. For this reason we refer in some detail to an extensive study[5] involving both physiologic and pharmacologic considerations in relation to what was for a long time considered as ordinary tissue-lymph bathing the nervous structures. It is almost universally accepted that the main source of the fluid is the "choroid gland," as Mott terms it. This English neurologist regards the cerebrospinal fluid as playing the part of a lymph in the central nervous system, that is, on the one hand, as a nutrient fluid which comes into immediate contact with tissue elements, and, on the other, as a medium which receives from the nervous tissues the products of their metabolism. There are further possibilities expressed by the secretory hypothesis, which assumes that the cells in the choroid plexus are involved in a way in the production of the cerebrospinal fluid that cannot be explained on the basis of simple diffusion. In this respect we are merely repeating here the controversy so long kept alive in physiology respecting the essential nature of the secretion. Cerebrospinal fluid, too, may prove to be a typical secretion.

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[1] Some Extremes in Nutrition, editorial, The Journal A. M. A., March 7, 1914, p. 780.

[2] Yukawa, G.: Ueber die absolut vegetarische Ernährung japanischer Bonzen, Arch. f. Verdauungskr., 1909, xv, 471

[3] Yukawa, G.: III and IV. Bericht über die absolut vegetarische Ernährung japanischer Bonzen, Arch. f. Verdauungskr., 1913, xix, 356.

[4] McCay, D.: The Protein Element in Nutrition, London, 1912.

[5] Dixon, W. E., and Halliburton, W. D.: The Cerebrospinal Fluid: I. The Secretion of the Fluid, Jour. Physiol., 1913, xlvii, 215.

There is no concordance in regard to the total fluid formed per day in man. It is certain, however, that in man any puncture of the dura mater may lead to a continuous flow; and a drop every two or three seconds may continue to be discharged through a puncture from accident or operation for days without any marked ill effects. Many cases in man have been described in which the flow persists for weeks, or so long as the orifice remains open, often at the rate of 100 c.c. (3⅓ ounces) per hour, or even more.[1] One must conclude from this that the fluid is being continually poured into the cerebrospinal canal cavity, and through the foramen of Magendie into the subarachnoid cavity, with which it is continuous.

The principal new fact brought out by Dixon and Halliburton is that an intravenous injection of an extract of choroid plexuses (choroid gland) produces an increased secretion of cerebrospinal fluid. These English investigators have taken pains to exclude purely mechanical factors as the sole cause for this augmentation, and they are convinced that altered respiratory or vascular conditions will not account for it. The production of a specific chemical substance — a hormone — regulating the production of cerebrospinal fluid at once comes to mind. Dixon and Halliburton state that whether or not the "choroid hormone" originates in the central nervous system, it is undoubtedly true that extracts of the brain produce the same effects as are brought about by the choroid extract. They venture the belief, therefore, that some product of the brain's metabolism passes to the choroid plexus, and that this stimulates the secreting epithelium, which causes the plexus to become active. In cases of general paralysis and brain softening in which disintegrative processes are excessive, the cerebrospinal fluid is found to contain an active material which produces the same effects. No conclusion can yet be drawn regarding the precise chemical nature of the active brain or choroid product.

If it be true that the stimulating substance is formed as the result of the metabolism of the brain, some analogy is presented to other hormones which act as chemical stimuli. There are other substances that accelerate the flow of cerebrospinal fluid, notably carbon dioxid; this, however, is not specific in its action, and belongs to the group of products which promote the increased volume by indirect responses. We are reminded that the cerebrospinal fluid of man contains a high percentage of carbon dioxid, and that an excess of this in the blood causes an increase in the rate of secretion. Carbon dioxid is a poison to the central nervous system, and it is suggestive that cerebrospinal fluid is a means for the rapid excretion of carbon dioxid during nervous metabolism.

THE ETIOLOGY OF HODGKIN'S DISEASE

In this brief account of some interesting recent work on the cause of a heretofore obscure disease, the name "Hodgkin's disease" is used as synonymous with lymphomatosis granulomatosa of certain European writers. Formerly included under pseudoleukemia and no doubt confused with different diseases, the common feature of which is enlargement of the lymphatic structures, Hodgkin's disease, in the sense in which the term is used here, is now recognized as a distinct disease characterized by peculiar changes in the lymph-glands and spleen of a chronic inflammatory nature, and consequently susceptible of definite diagnosis by means of microscopic examination of affected tissue. The microscopic picture shows a variety of cells with more or less fibrous tissue and also areas of necrosis. In addition to fibroblasts and lymphocytes there are large cells and giant-cells as well as plasma and eosinophil cells, the latter often in enormous numbers, and usually associated with polymorphonuclear leukocytes. The number and relation to each other of these various cells, as well as the quantity of the fibrous tissue, vary greatly. Areas of necrosis are frequent and usually not very large.

Sternberg, who did so much to separate this disease from the other diseases of the lymphatic system, at first believed that it concerned a special and peculiar form of tuberculosis, and he as well as a number of others did find tubercle bacilli in occasional cases; but it has now become apparent that most likely this is explainable as due to coincident tuberculous foci. In 1910 Fraenkel and Much demonstrated in the tissues from twelve of thirteen cases of Hodgkin's disease Gram-positive, granular bacilli which resisted the action of antiformin, but were not acid-fast. Since then similar observations have been made by others. Recently Kusunoki,[1] working in Kaufmann's laboratory in Göttingen, found such bacilli in the characteristic lesions of every case examined, sixteen in all. These bacilli all resisted antiformin, were decolorized by acids and were Gram-positive and granular. In the sections they were especially numerous in the areas in which large cells and giant-cells were numerous.

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[1] Kusunoki: Virchows Arch. f. path. Anat., 1914, ccxv, 184.

At this point several interesting questions arise which can only be referred to. Are these interesting bacilli modified forms of tubercle bacilli? Naturally, this remains an open question; but on first impression it does not seem likely that they are identical with the genuine tubercle bacillus. Another question is, What is the relation of these bacilli to the bacilli that recently have been isolated in culture from affected glands in Hodgkin's disease by de Negri and Miesemet, Bunting and Yates and others? Morphologically there is much resemblance; and de Negri and Miesemet, who found rods like those mentioned in two cases from which they secured cultures, regard them in their cases at least as identical. The complete solution of this question probably awaits the successful experimental reproduction of the disease, in which Bunting and Yates report promising results in the monkey.

The effects of vaccines made from the bacilli cultivated from cases of Hodgkin's disease also no doubt may be expected to help in solving this question. The statement certainly is justified that the full solution of the problem of the etiology of Hodgkin's disease does not seem far away.

THE TRANSMISSION OF PELLAGRA BY MEANS OF INSECTS

The hypothesis that pellagra is an infectious disease transmitted by some biting insect is based entirely on epidemiologic data. The theory originated with Sambon, who first incriminated the buffalo-gnat (*Simulium*), but subsequently had to enlarge his views by including some other biting fly, since he found pellagra in certain places unassociated with the prevalence of *Simulium*. Epidemiologic studies on pellagra, which have been the fashion of late, are valuable if made without bias, carefully and honestly. Unfortunately, the epidemiologic data on pellagra, collected with the expenditure of so much energy, in too many instances bear witness to the mental bias of an observer in favor of his preconceived theory, which to the unprejudiced mind seems rather scantily supported by fact.

Arguments from epidemiologic data, moreover, present one fundamental limitation which should not be forgotten. While epidemiologic facts may make it possible to trace to its source an outbreak of a disease of known etiology, they cannot alone solve the problem of a disease of unknown etiology. In the investigation of an outbreak of typhoid fever, for example, the etiology and transmission of which are fairly well understood, some fairly definite conclusions concerning the nature and cause of that outbreak may be formed from epidemiologic data alone. This is due to the fact that the epidemiology and etiology of this disease have from long experience been fairly well correlated. On the other hand, in dealing with a disease of absolutely unknown etiology like pellagra, epidemiologic data assume an entirely different aspect. Here we have no reliable means of discriminating between essentials and non-essentials. What appears to be the most trivial circumstance may in reality be of great importance; and what appears most important may ultimately prove to be of almost negligible value, so that matters which seem to have no connection with the disease may, when one has the key to the situation, prove to be essential epidemiologic features. This has been amply proved many times in the investigation of various diseases. Conclusions concerning etiology must therefore be drawn with the most extreme caution and only tentatively when based solely on epidemiologic data.

These considerations may well be borne in mind in connection with a report of recent investigations covering a period of several months, undertaken by Jennings and King in cooperation with the Thompson-McFadden Pellagra Commission, in Spartanburg County, South Carolina. The authors state that they entered on the investigation "with no bias in favor of the infectiousness of pellagra or its transmissibility by insects." Of course, however, "it was necessary to assume that both were among the possibilities." They considered ticks, lice, bedbugs, cockroaches, horse-flies, fleas, mosquitoes, buffalo-gnats (*Simulium*), house-flies and stable-flies (*Stomoxys*); and, on what they deemed ample grounds, rejected all except the stable-fly (*Stomoxys calcitrans*) as possible factors in the transmission of pellagra. This fly, they think, "displayed certain salient characteristics which seem to qualify it for the rôle of a transmitter of pellagra." They find support for this view largely in certain epidemiologic characteristics of pellagra, notably its seasonal occurrence, peculiarity of sex incidence (predominance of cases in females) and age distribution, and the occurrence of isolated sporadic cases.

Jennings and King have not taken into account the fundamental limitation of epidemiologic arguments mentioned above. Thus, in commenting on the greater prevalence of disease in females, they say: "So pronounced an inequality must be based on some fundamental difference either in environment or physiologic organization of the sexes." As a matter of fact, it is not necessarily based on either. The epidemiology of such diseases as beriberi and ergotism, each of which is regarded by many as possessing close analogies with pellagra, has frequently shown similar peculiarities of sex incidence. The apparently anomalous distribution of pellagra in a family or household (frequent—perhaps usual—occurrence of only one or two cases in the family group) is also paralleled in beriberi and in ergotism. It is sometimes difficult to understand the cause of such phenomena in diseases which etiologically are so entirely dependent on food. Yet this observation was amply confirmed. In selecting analogies in support of the theory of insect transmission, moreover, Jennings and King were unfortunate in mentioning poliomyelitis.

At present the theory of the transmission of this disease by insects seems scarcely better substantiated than does the parallel theory with regard to pellagra.

As an intensive field of study in entomology, this investigation has apparently been well done; but too much reliance should not be placed on conclusions drawn by such methods from epidemiologic data.

TRANSMUTATIONS IN BACTERIAL SPECIES

Variations and transformations in the biologic characteristics of different species of bacteria have been noted by many observers. The changes noted earlier pertained to minor characteristics of the organism, such as variations in virulence, capsule formation and fermentative power, but recently reports indicate that characteristics which have been regarded as essential to the identity of the species have been so modified through environmental conditions that, if these changes are verified by further experimentation, we shall be led to question the permanence of bacterial species. Thiele and Embleton[1] report decided changes in the characteristics of *Bacillus mycoides*, which is a non-pathogenic organism common in garden soil. This organism grows at low temperature as a slender, motile, non-capsulated, flagellate bacillus, and does not survive incubation at body temperature. By gradual increase in the temperature of incubation the organism was educated to grow at the temperature of the body. Animals were then sensitized against this organism by injecting them with a large quantity of killed bacilli, followed after from ten to fifteen days by an injection of living bacilli. The organisms were recovered from the animal by culture and the process repeated. In this way the organism became pathogenic, lost its flagella and motility, acquired a capsule, became shorter and thicker, and, in short, possessed the characteristics of *B. anthracis.* These experimenters assert that it also produced lesions indistinguishable from those of anthrax, and was so virulent that a small inoculation intraperitoneally killed guinea-pigs in twelve hours. They report that in a similar way the smegma bacillus was raised to such a degree of virulence that it produced death in normal rabbits in from seven to twenty days following inoculation. Typical miliary tubercles containing acid-fast bacilli were found throughout the viscera and serous membranes. Thiele and Embleton also report the transformation of the Hoffmann and other diphtheroid bacilli into virulent organisms indistinguishable either by fermentative tests, animal inoculation or morphology from the true *B. diphtheriae.*

Rosenow,[2] in a recent communication, reviews the observations of others on transformations among the members of the streptococcus group, and gives the results of an extensive series of experiments. The organisms used were the pneumococcus, *Streptococcus viridans, S. hemolyticus, S. mucosus* and *S. rheumaticus.* The experiments included the culture of the organisms under a variety of conditions, both favorable and unfavorable, and the notation of the changes produced in the morphology, biochemical properties and virulence of the different strains of cocci. The organisms were grown in oxygen tension varying from an atmosphere of pure oxygen to complete anaerobic conditions, in mediums of hypertonic and hypotonic salt percentage, on slightly dried mediums at temperatures slightly above or below that of the body, and subjected to the influence of various body-fluids, as sterile milk, urine, ascites fluid, etc. The organisms were grown also within the body-cavities and in the circulating blood of living animals exposed to the influence of other bacteria as in symbiotic growth with *B. subtilis,* etc.

By various combinations of these conditions, organisms isolated from a wide variety of sources, including pneumonia, erysipelas, scarlet fever, puerperal sepsis, arthritis, tonsillitis, cow's milk, etc., were so completely changed in character as to correspond in every detail to the description of other cocci than the one with which the experiments began. That these mutations were complete would seem to be established by the production of specific opsonins and agglutinins and by the ability to produce characteristic lesions when inoculated into animals, as well as by the morphology and biochemical and fermentative properties of the organisms. For example, a hemolytic streptococcus when converted into a pneumococcus was no longer able to hemolyze red corpuscles, caused death in inoculated animals by rapid pneumococcemia, was agglutinated by antipneumococcus serum and not by antistreptococcus serum, acquired a capsule, was no longer susceptible to phagocytosis, grew as a diplococcus and not as a streptococcus, fermented inulin and raffinose and not mannite, and became readily autolyzed in sodium chlorid solution and in bile. Transmutations as complete as this are reported of each of the members of the streptococcus-pneumococcus group. In some cases the extra precaution was taken to begin with a strain arising from a single coccus isolated by the Barber method. In these cases the transformations were as complete as when the regular cultural methods only were employed.

In bacterial cultures we are able to subject many generations of the species to changed environmental conditions within a short space of time; we are also dealing with the lowest forms of life — forms in which there has been a minimum of differentiation and specialization of function. Considering these facts, we are not surprised that environment as represented by varying cultural conditions will produce variations in the bacterial species within a comparatively short time.

Rosenow's observations, aside from their biologic significance, suggest one explanation of the supervention of one clinical type of infection on another, as in the sequence of tonsillitis, rheumatism, endocarditis, etc. If transmutations such as he observed may follow changed conditions *in vitro*, environment *in vivo* may also cause changes in the character of the invading organism. In these transmutations Rosenow noted that the different mutants showed marked special affinity for certain tissues in the animals inoculated, one form localizing always in the joints, another in the muscles or in the structures of the heart. It is clear that these results, if accepted, have a wide significance, not only with respect to the causation of certain infectious processes, but also with respect to their treatment.

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[1] Thiele and Embleton: Ztschr. f. Immunitätsforsch. u. exper. Therap., 1913, xix, 643.

[2] Rosenow: Transmutations within the Streptococcus-Pneumococcus Group, Jour. Infect. Dis., 1914, xiv, 1

PALEOPATHOLOGY

With new "ologies" coming into vogue in science to-day about as rapidly as new species of microorganisms were described a few years ago, it begins to tax one's memory to relegate each novelty to its appropriate place among the ever-growing variety of disciplines which one is expected to appreciate, if not actually to master. Paleopathology is one of the latest. This word was coined by Dr. Marc Armand Ruffer, not to suggest the science of extinct diseases, as a comparison with the well-known term "paleontology" might lead one to suppose, but rather to apply to "the science of the diseases which can be demonstrated in human and animal remains of ancient times."[1] The singular conditions of custom and climate which have preserved the mummies of old Egypt until the present day have made it possible to conduct post-mortem examinations on the people of the earlier centuries and to compare their anomalies of anatomic structure or the defects produced by disease with the pathologic manifestations of the present day and generation. Such investigations have already unfolded many facts of interest in respect to the existence and incidence of disease in bygone times, and have contributed important facts to the history of medicine.

The perfect preservation of many of the bodies which have become available in Egypt is little short of remarkable. The features of the real mummies are widely known. Coptic bodies which have recently been examined by Ruffer belong to a somewhat different class. They came from Antinoë in Upper Egypt; and dating from the fifth to sixth century they were therefore from about 1,400 to 1,500 years old. They had undergone no artificial process except that, at one time, they had been covered more or less extensively with salt. The real preservative had been the dry Egyptian sand in which they had originally been buried enclosed in wooden coffins. Never having been disturbed by the embalmer, the organs were *in situ*, and the bodies contained no resin, gum or any materials such as mud, sand, rags, etc., generally used in old Egypt for packing the body after removal of the organs.

In our environment, where special precautions are promptly necessary to preserve the remains of the body from deterioration or decay, it is surprising to hear of microscopic sections showing the glands of the alimentary tract in the Coptic bodies in a remarkably fine state of preservation after all these centuries, or to learn that the lobes of the brain and some of the convolutions were recognizable and that the fibers and valves of the heart could be made out, or again to note that in two aortas well-marked calcareous plates were found. Abnormalities of the bony structure are, of course, more perfectly preserved. Ruffer points out that the demonstrable occurrence of spondylitis deformans among ancient Copts is one more proof that the disease has existed throughout Egypt from the remotest times and is independent of climate. It has been found in bodies buried close to the Mediterranean shores, in bodies from Upper Egypt and Nubia, and even in a skeleton buried in the tropics at Merawi, one of the hottest and dryest places in the world. In the Coptic bodies a peculiarity of the disease is that as a rule it was localized to a few vertebrae.

Among other pathologic phenomena not hitherto described for ancient peoples, Ruffer reports instances of hypertrophy of the middle turbinated bones. This has now been found in both Egyptian skulls and Greek skulls dating from the time of Alexander the Great. Pathologic changes of the soft parts, recognizable macroscopically, were not common. Judging from two cases of hypertrophied spleen which were found in Coptic bodies, Ruffer ventures the suggestion that these people suffered from malaria.

Pyorrhea alveolaris and periodontitis appear to be as old as the human race. Evidence of such disease has been found in prehistoric skulls and in the specimens from almost all nationalities. Ruffer has found nothing to suggest that the Copts knew anything about dentistry. The long-recognized bad state of the teeth of ancient Egyptians is again emphasized in the Coptic bodies. Almost every skull has some serious dental defect. It is suggested that this may perhaps be accounted for by the fact that very little care of the dentition appears to have been taken. The thick incrustations of tartar are sufficient evidence that the Copts did not clean their teeth at all. In many peoples and animals the absence of the tooth-brush is compensated for by the fact that the food is hard, fibrous and raw, requiring a good deal of chewing, which mechanically cleans the teeth. In ancient Coptic times this does not appear to have been the case, for in contrast to the predynastic bodies in which attrition is very marked, this is slight; in fact, being less marked than it is in Egyptians of the present day. Ruffer concludes that the Copts of Antinoë lived chiefly on cooked soft food, chewed without effort. Caries was extremely common and was possibly due to the nature of the food consumed.

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[1] Ruffer, M. A.: Studies in Palaeopathology in Egypt, Jour. Path. and Bacteriol., 1913, xviii, 149.

THE LOAF OF BREAD

The wide-spread propaganda for the purity of the food and drug products of this country has resulted in the necessary attempt to standardize all articles which enter into these categories. In the case of certain familiar materials like sugar and coffee this has not involved any formidable difficulties. The question as to what constitutes mince pie, on the other hand, has aroused storms of claims and counterclaims on behalf of the recipes of different regions and generations. Like numerous other illustrations which might be cited, this experience has served to call attention to the really great diversity of our food concoctions and the pardonable laxness in the use of current terms that appear in the American menu. One may well apply here the proverb: *De gustibus non disputandum est.*

It might be expected that so common an article of diet as bread at any rate would exhibit some uniformity of composition within relatively restricted regions. Yet if we accept the findings of the chemist of the Connecticut Agricultural Experiment Station, two hundred loaves of bread, representing the product of seventy-nine Connecticut, one Springfield and three New York bakeries, "showed wide variations in all their ingredients."[1] For example, the moisture content ranged from 27 to 40 per cent., so that in some instances at least the bread contained excessive amounts of water. The ether extract (fat) also showed a wide range, from 0.08 to 4.37 per cent. These differences are largely due to the methods of the bakers. In some cases only flour, yeast and salt are used, while in others milk, butter, lard and sugar, either alone or in combination, are employed. The variations in fat are also due in part to the fact, noted by several investigators, that in the process of baking a part of the fat is either destroyed or rendered non-extractable by ether. In some samples the amount of fat found is much lower than could have resulted from the use of any brand of flour. The variations in ash, protein and carbohydrates are due in part to differences in moisture content, but even more to the materials used.

A comparison of the variations in the composition of a supposedly standard product like a five-cent loaf of bread is interesting in other directions also. The actual amount of dry matter per loaf in the Connecticut samples ranged from 7.9 to 12.7 ounces; the average weight of the loaf in nine cities ranged from 12.9 to 15.2 ounces. A critical analysis of the data from an entire state shows that the cheapness of the three- and four-cent loaves indicated a real saving, as far as quantity is concerned, because the relative decrease in price was greater than the decrease in weight. Inasmuch as the price of a unit of bread — the loaf — has for conventional reasons remained stable at five cents, while the cost of the ingredients has increased, changes in the real cost of the nutrients of bread must be sought in the changes of size or composition of the loaf. According to investigations made in New Jersey in 1895, loaves costing four and five cents weighed from 12.7 to 21.8 ounces, average 16.4 ounces. In 1895 in New Jersey 58 per cent. of the five-cent loaves weighed over 16 ounces, and 83 per cent. over 15 ounces, while in 1912 in Connecticut only 7 per cent. weighed over 16 ounces, and only 16 per cent. over 15 ounces. Assuming similar conditions in these two states, the average weight of the five-cent loaf has shrunk since 1895 from 16.4 to 14 ounces, or 15 per cent. When all has been said the student of nutrition will doubtless still remark that bread is cheap at any price.

TWO THEORIES OF DIABETES

Out of the bewildering mass of theories concerning the underlying features of diabetes two points of view in particular have become prominent. One of these represents the fundamental defect in this disease as an inability on the part of the organism to utilize carbohydrate. The other view, championed earlier by Chauveau, and more recently by von Noorden, refers the difficulty primarily to an overproduction of sugar in the body. The latter condition could easily be reconciled with the now generally admitted fact that true diabetes, in practically every case, is attended with an excess of sugar in the blood, the hyperglycemia attaining varying degrees of intensity under diverse circumstances.

The existence of hyperglycemia is not sufficient to serve as a sole deciding factor between the two theories outlined above; for it is equally conceivable that hyperglycemia and glycosuria may arise from the presence of carbohydrate which is liberated in normal rather than excessive amounts, but which accumulates because it is not destroyed by the usual metabolic processes. Accordingly, the advocates of the sugar-overproduction theory of diabetes have sought for other evidence to support their contention and believe that they have found it through a study of the respiratory quotient. Unnecessary effort and too much space are required to present here the technicalities of this evidence. Briefly speaking, it involves the alleged demonstration that the respiratory quotient of 1.0, which is typical of carbohydrate combustion in the body and which is said to be obtained when the glycogen-storing liver is excluded from the circulation, can also be obtained after excision of the pancreas — the classic mode of producing experimental diabetes. Von Noorden[1] believes that herein is to be found the first positive support for the hypothesis of sugar overproduction in contrast with that of deficient destruction of carbohydrate in diabetes. His overproduction theory further maintains that the pancreas is not essential to the combustion of sugar, but serves as an inhibitor or brake on the production of sugar, the adrenals being the real "mobilizers" of the carbohydrate.

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[1] Street, J. P.: Food Products. Bread, Rep. Conn. Agr. Expt. Sta., New Haven, Conn., Food and Drug Products, 1913, part I, sec. 2, p. 257.

[1] Von Noorden, C.: Die Zuckerkrankheit und ihre Behandlung, 1912, p. 163.

We have taken pains in the past to point out that the still widely quoted hypothesis of von Noorden is in no way tenable and presents an incorrect picture of the chemical pathology of diabetes. The experiments on which it was founded have been shown by Minkowski, Lusk, Murlin and others to be erroneous. The latest protest against the overproduction theory, if another were needed, has been furnished from the medical clinic in Leipsic by Rolly and David.[2] They insist, as we have suggested in the past, that the primary factor in human diabetes is an inadequate utilization of carbohydrates. Whenever, as in the severe type of the malady, an excessive production of sugar perchance accompanies the inability to burn this foodstuff, the overformation of sugar is to be regarded as a secondary phenomenon, the outcome of the sugar-hunger of the tissues.

Current Comment

A DISEASE OF THE SUBLINGUAL GLANDS RESEMBLING MUMPS

It is rather singular that in mumps other salivary glands than the parotid are rarely involved. In a series of seventy-seven cases of this disease, Lietzen observed six cases in which the submaxillary glands only were swollen, and isolated involvement of the sublingual glands seems much less frequent. Hegler[3] recently described a series of eight cases of a disease greatly resembling mumps in which the involvement was limited to the sublingual glands. Seven of the cases were in hospital nurses, the eighth patient was admitted to the hospital, and similar cases occurred at the same time outside. No instance of typical mumps was, at this time, either within or outside the hospital. The disease began acutely without any special premonitory symptoms, a slight fever, with headache, muscular pains and drowsiness occurring in most cases, but all these general symptoms subsided quickly. There was only a slight leukocytosis. The most significant symptom was a tension and swelling in the submental region and the floor of the mouth; the skin under the chin became stretched, glistening and painful, the bulge resembling a double chin. The sublingual folds became prominent and sometimes the caruncle appeared red and edematous. In one case inflammation of the duct of the right sublingual gland and swelling of the right submaxillary region were also present. In most cases there was increased salivation, the secretion being clear, thin and weakly alkaline. The swelling in the floor of the mouth generally subsided in from eight to fourteen days from the beginning, recovery in all cases being complete. Bacteriologic examination of the saliva gave no positive result; neither did animal experiments. As the disease seemed to be entirely independent of epidemic mumps, no cases of mumps developing in those who came in contact with the patients, who were not isolated, Hegler believes that the cases were not instances of mumps localizing in the sublingual gland, but rather of a different infection having a special tendency to involve these particular glands. Further observations will be necessary to settle the exact nature of the novel disease described by Hegler. It is possible that the question of the identity of this disease with that of mumps might be settled by means of experiments on dogs under suitable conditions, because Herb[4] has shown that mumps may be produced in dogs by inoculating its specific organism into the duct of the parotid gland.

A "DANGER-SCALE" FOR ATHLETICS

Inasmuch as the fundamental aim of athletics is, or at any rate ought to be, health, it is not unreasonable to ask in what degree each type of game or sport approaches this ideal of contributing to a sound body and the enjoyment of its physical resources. It will probably be found difficult to compare the health-giving virtues of tennis and cricket, of skating and basket-ball, of rowing and tug-of-war. The factors of enjoyment, of the special participation of definite organs of the body, of opportunity, season, environment, etc., are too complicated to permit a very critical analysis. But Dr. Bartsch[1] of Heidelberg has wisely suggested that it may become feasible to correlate the dangers attending the various athletic sports and to furnish a sort of "scale" — *Gefahrenskala,* as he naively terms it — whereby one could determine the relative likelihood of damage or injury to be encountered in the prominent athletic pastimes. This is not unlike the condition in industrial occupations, for many of which the incidence of accident and harm is known. If the statistics of accidents in athletics, and the personal harm known to result all too often, could be gathered in some way for purposes of public contrast, the physician and physical culture teacher could advise more intelligently regarding the desirability of participation. We believe, however, that the greatest advantage of this suggestion would lie in the reforms which the facts thus elicited would inevitably promote. A few well-attested data regarding the undoubted dangers of crew races, of football and some other much-vaunted sports might serve to direct public attention to the abuses of athletics. The promoters are then usually quick to respond.

FLEAS AND BACTERIA

Certain features in the life history and habits of the flea, an insect responsible for more than one of the ills of mankind, suggest the possibility of a sort of endless chain in the perpetuation of infectious agents. The well-known fact that the larvae of the flea feed freely and sometimes preferably on the dejecta of their own species, as well as on the feces of rats, brings out the possibility that the intestine of the flea larvae may become infected with bacteria that are present in the food on which they are nourished, for example, the feces of their parents. This raises the question as to whether the micro-organisms can survive within the intestine during the metamorphosis from larva to pupa and from pupa to imago, until finally the adult flea is produced. The entomologist of the Lister Institute in London, Dr. A. W. Bacot,[1] has put the matter to the direct test of experiment. The results show that the alimentary canal of the flea larva may become infected with such bacteria as *Bacillus pyocyaneus, B. enteritidis, Staphylococcus albus and S. aureus,* and that the infection of the larval intestine may persist to the period of the cocoon. There is no satisfactory evidence, however, that such infection can survive the pupal stage. Inasmuch as flea larvae thrive on a diet composed of their parents' feces and as for some species this is a normal and perhaps a necessary source of food, it is significant that the *Bacillus pestis* has frequently been detected in the droppings of certain species of fleas taken from plague-infected rats. Fortunately, the conditions in the alimentary canals of flea larvae do not appear to be very favorable to the growth of the plague bacillus. At any rate, there is not the massed multiplication noted in the adult fleas. An interesting contrast to the non-survival of bacteria in the flea's intestine after the larval stage is afforded in the case of the housefly (*Musca domestica*). Infection of the alimentary tract at the larval period of this species has been shown to survive to the adult stage.[2]

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[2] Rolly, F., and David, H.: Handelt es sich bei dem Diabetes mellitus des Menschen um eine primäre Ueberproduktion von *Zucker? München. med. Wchnschr., 1914, Jan. 27, p. 169.*

[3] Hegler: Beitr. z. Klin. d. Infectionskr., 1913, 1, 229.

[4] Herb: Arch. Int. Med., September, 1909, p. 201.

[1] Bartsch, H.: Sport und Unfall—eine hygienisch-chirurgische Frage, Berl. klin. Wchnschr., Jan. 19, 1914, p. 113.

ANOTHER ANTIVIVISECTION FIASCO

As the time for legislative hearings on the annual antivivisection bills approached in New York, the suggestion began to be insinuated that the vivisectors were becoming bolder, that now only human beings would satisfy their eagerness for experimentation, and that these reckless and vicious exploiters were deliberately causing diseases in helpless children. This suggestion was seized on, emphasized and modified, especially by the Hearst papers, until from Boston to Los Angeles the headline, "Babies, Blood and Science" was preliminary to the assertion that innocent infants were being inoculated with the germs of fatal or loathsome diseases. Guinea-pigs and rabbits were becoming a drug on the market, because "babies were easier to get and were much more interesting subjects"! And from Boston to Los Angeles it was announced that following the disclosure of "experiments with luetin," forty-eight cases had been reported of children who had entered New York hospitals to be treated for minor contagious diseases and had been sent home suffering from syphilis. The leader of one of the antivivisection societies sent to the superintendent of schools the names and addresses of the children referred to in the report. The superintendent was properly scandalized by these outrageous conditions and demanded an investigation. This was undertaken by the city commissioner of health. What was the result? Investigators visited forty families named in the list. Of this number fifteen could not be found at the given addresses. Interviews were obtained with twenty-five families in which there were twenty-four children. Among these not a single case of syphilis or of suspected syphilis was found. And there was no evidence whatever of the injection of any of these children with serum or vaccine. As the commissioner's report concludes, "Time and again statements made by the antivivisectionists have been proved to be unqualifiedly false, and yet these propagandists continue to make them. Truth and antivivisectionists are utter strangers."

A FITTING REJOINDER

The statements of *Life* on medical and public health questions are usually so distorted and radically misleading that we have always supposed the average reader did not take its utterances seriously. The Boston *Herald,* however, recently replied to one of *Life's* characteristic insinuations in words which are worth quoting. *Life* said:

> THE MEANEST CRIME
>
> The assassin who shoots you in the back does a cowardly thing. But he does it frankly as an enemy, and he takes chances of punishment. He knows there are legal penalties for that kind of murder.
>
> But when a doctor in a hospital tries his latest "discovery"—a surgical trick, or the injection of a fatal disease into a confiding patient—he does it, not openly as an enemy, but pretending to be a friend. Unlike the assassin who shoots you in the back, he has no fears of punishment. He is doubly safe, because he selects his victims among the poor, the sick, the helpless.
>
> Such victims, always the weak and friendless, whose only hope is in health and strength, are indeed fortunate if they escape with no more diseases than when they entered.
>
> No law protects them.
>
> There is no punishment for this meanest of crimes.

To this the Boston *Herald* replied:

> Is there anything more cowardly than lying insinuations against a set of men and women who devote their lives, and often sacrifice them, to alleviate suffering?
>
> Is there anything more contemptible than the back-handed thrust of generality to conceal the falsity of what admits of no proof?
>
> Is there anything more unworthy of a paper that lays claim to being a force for good than to sow the seeds of malicious untruth?
>
> No law prevents this form of slander.
>
> There is no punishment for this meanest of journalistic crimes.

THE CILIA OF THE NASAL MEMBRANE

Not infrequently it happens that the phenomena which we encounter every day are those about which our information is most meager. The nose is one of the few organs in which ciliated epithelial cells play a physiologic part. Aside from the mere fact of its existence and a somewhat hazy idea of its location, little is currently understood of the function of the differentiated membrane that constitutes the respiratory portion —the *regio respiratoria* in contrast to the *regio olfactoria*—of the nasal mucous tract. The ciliated epithelium which lines this tract is stratified and rests on a basement membrane like that in the trachea. The natural assumption that the cilia waft toward the anterior nares instead of the pharynx, in order most expeditiously to cast out of the body the accumulated sediment from the inspired air, is further supported by the fact that mucus containing soot and dust particles tends to collect in the anterior part of the nose, and has been verified by Bryant[1] in his examinations of the ciliary movements in fresh human tissue from turbinotomies. He remarks, also, that the convulsive reflex act of sneezing to clear the nose plainly demands a forward movement of the cilia; for if this explosion were against the action of these cells, considerable traumatism might result to the delicate Schneiderian membrane.

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[1] Bacot, A. W.: On the Survival of Bacteria in the Alimentary Canal of Fleas during Metamorphosis from Larva to Adult, Jour. Hyg., Plague Supplement III, 1914, p. 655.

[2] Bacot, A. W.: The Persistence of *Bacillus pyocyaneus* in Pupae and Imagines of *Musca domestica* Raised from Larvae Experimentally Infected with the Bacillus, Parasitology, 1911, iv, 68. Leddingham: On the Survival of Specific Micro-Organisms in Pupae and Imagines of *Musca domestica* Raised Experimentally from Infected Larvae, Experiments with *B. typhosus,* Parasitology, 1911, iv, 333. Graham-Smith: Further Observations on the Way in Which Artificially Infected Flies Carry and Distribute Pathogenic and Other Bacteria, Rep. Local Government Board on Public Health and Medical Subjects, 1911, liii, 31.

Medical News

ILLINOIS

New Officers.—Greene County Medical Association at Carrollton, March 13: president, Dr. Frank H. McLaren; secretary, Dr. Henry A. Chapin, both of White Hall.

State Anti-Tuberculosis Society to Meet in Tennessee.—The 1914 meeting of the Illinois State Association for the Prevention of Tuberculosis will be held in Memphis, Tenn., May 12, in conjunction with the National Conference on Charities and Correction.

Chicago

Leper to Be Deported.—Arrangements are being made to have Carl Wallgren, the leprosy patient at the County Hospital, deported to Sweden.

Personal.—Dr. William Cuthbertson was elected president, and Dr. Hugh N. MacKechnie, secretary-treasurer of the Chicago Alumni Association of Toronto University, March 21.

They Were Not Vaccinated.—Forty-one cases of small-pox had occurred in Chicago from January 1 to March 14 according to the *Bulletin of the Chicago School of Sanitary Instruction.* Thirty-six of the patients had never been vaccinated. The other five were adults ranging in age from 57 to 26 and had been vaccinated in early childhood. Of the last twenty-one victims of the disease nineteen had never been vaccinated.

INDIANA

Health Officers Organize.—At a meeting of the Health Officers of Lake County held in East Chicago recently, the Lake County Health Officers Association was formed with the following officers: president, Dr. William D. Weis, Hammond; secretary-treasurer, Dr. John E. Metcalf, Gary.

Personal.—Dr. William H. Gilbert, Evansville, charged with having set fire to his hospital, was acquitted, March 14.——Dr. and Mrs. Arthur R. Simon, La Porte, will sail for Europe April 15.——Dr. Charles M. Clayton, Indianapolis, charged with the murder of Joseph H. Stout, was acquitted February 27. ——The office of Dr. Orville A. Bigham, St. Anthony, was destroyed by fire recently.

IOWA

New Officers.—Marshall County Medical Society at Marshalltown, February 17: president, Dr. Winfield S. Devine; secretary-treasurer, Dr. George M. Johnson, both of Marshalltown.

Personal.—The house of Dr. William L. Allen, Davenport, was damaged by fire to the extent of $8,000, March 13.——Dr. Benjamin E. Eversmeyer, Muscatine, is ill with septicemia.——Dr. Louis F. Cummings, Hopkinton, sustained severe injuries from the overturning of his motor-car, March 15.

Epileptic Colony Located.—The State Epileptic Colony has been located near Woodward, about nineteen miles northwest of Des Moines, where the State Board of Control has purchased, at a cost of $188,160, a tract of 960 acres as a site. It will probably be two or three years before the colony will be in operation.

Sanatorium Notes.—The tuberculosis hospital being erected for Scott County in Davenport, at a cost of about $50,000, is almost completed.——Two buildings are to be erected by the state at the State Tuberculosis Sanatorium, Oakdale, at a cost of $85,000. The first will be a three-story structure to be occupied by patients in the advanced stages of tuberculosis; the second building will be used as a home for the medical and administrative officers.

Suit Involving Quarantine Regulations.—Prosecution to compel compliance with the health board regulations has begun at Mason City against James Irons, a prominent business man. A daughter of Irons had measles and the house was placarded, but not quarantined. At the termination of the case Irons refused to permit the fumigation of his house, or to take a formaldehyd bath, according to the requirements of the health board. The local health authorities have the assistance of Dr. Guilford H. Sumner, Des Moines, secretary of the State Board of Health, in attempting to uphold the health regulations.

KANSAS

State Society Meeting.—The annual meeting of the Kansas State Medical Society will be held in Wichita, May 6 and 7.

New Officers.—Northeastern District Medical Society at Kansas City, February 19: president, Dr. Edwin T. Shelly, Atchison; secretary-treasurer, Dr. Jacob L. Everhardy, Leavenworth.——Cloud County Medical Society at Concordia: president, Dr. Charles Stein, Glasco; secretary, Dr. Edwin N. Robertson, Concordia.

Personal.—Dr. R. Cecil Smith, Beloit, has gone abroad.—— Dr. Wilson R. Priest, Concordia, has succeeded Dr. Winfield O. Thompson, Dodge City, as a member of the State Board of Health.——Drs. Oliver S. Rich, Wichita, and Jonathan H. Winterbotham, Salina, have been appointed members of the State Board of Health.——Dr. Roscoe T. Nichols, Liberal, has been appointed student physician of the State Agricultural College, Manhattan.

MARYLAND

Bichlorid Tablet Bill.—The bill regulating the sale of bichlorid tablets which had passed the legislature and was ready for the governor's signature, has been returned to the senate and a new bill introduced which provides that the bichlorid tablets must be in an irregular shape, of a startling color and branded "poison."

Appropriations to Baltimore Hospitals.—The appropriation by the general assembly of Maryland to the following hospitals of Baltimore city are as follows: Maryland General Hospital, $16,000; Mercy Hospital, which must provide for one patient at a time from each senatorial district of the state, $22,500, and University Hospital, which must provide for one patient at a time from each senatorial district of the state and must satisfy the comptroller that it has done so, $20,000.

Report of the Health Department.—Of a total of 250 deaths in Baltimore last week, 46 were caused by pneumonia, according to a bulletin issued by Health Commissioner Gorter. During the same week of 1913, 239 persons died in the city from various diseases. The following contagious and infectious diseases were reported: Small-pox, 34; diphtheria, 24; scarlet fever, 18; typhoid fever, 1; measles, 14; mumps, 32; whooping-cough, 8; varicella, 24 and tuberculosis, 19. The total births reported were 314; white, 246; colored, 68; males, 160; females, 154.

Publicity To Be Discussed.—A public meeting is being arranged by the Baltimore City Medical Society. Leading physicians and newspaper men of this city will discuss the question of publicity and the medical profession. After the various ideas have been presented to the conference, it is proposed to have a debate and thresh out the problem into some form of agreement. The idea of harmonizing the opinions on medical publicity was suggested at a meeting held during the Health Conference of the Medical and Chirurgical Faculty at which the topic of publicity was a feature.

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[1] Bryant, W. S.: An Experiment to Prove that the Cilia of the Human Nose Waft Toward the Anterior Nares, Am. Jour. Physiol., 1914, xxxiii, 430.

Physicians and Vaccine Ordinance.—Dr. Randolph Winslow, president of the Medical and Chirurgical Faculty, Dr. Thomas R. Brown, president of the Baltimore City Medical Society, and Dr. Hiram Woods appeared before the First Branch of the City Council and spoke in favor of the ordinance which gives the health commissioner and his deputies the power to examine a person to determine whether or not he has been vaccinated successfully. New cases of small-pox are being discovered every day and the situation is by no means yet in hand. With the twenty-four additional vaccine physicians at work, a thorough campaign is being undertaken by the health department to vaccinate every person needing it.

Settlement in the Sadler Case.—A verdict of $6,000 damages was obtained in the superior court by Mrs. Sally Stirling Sadler in her suit against Dr. George H. Riggs of the Riggs Cottage at Ijamsville, for alleged assault and unlawful detention in his sanitarium. The patient was admitted to the sanitarium on voluntary commitment for six months, and before the expiration of this time, she was certified to as insane by two physicians. Judge Bond granted an instruction to the jury asked by Alfred S. Niles and E. Walton Brewington, counsel for Mrs. Sadler, that the "uncontradicted evidence established that she was unlawfully confined and detained by Dr. Riggs against her will in his sanitarium, and the verdict should be for such amount as they may find under the instruction of the court."

MASSACHUSETTS

Evening Clinics.—The Boston Dispensary opened evening clinics for men, March 23. The clinics will be held every Monday, Wednesday and Friday evening at 7:30. This clinic is primarily for genito-urinary diseases and will be under the charge of the regular staff of the dispensary.

Robert Brigham Hospital.—The Robert B. Brigham Hospital, on Parker Hill, Boston, was informally opened March 15. The medical staff consists of Dr. Louis M. Spear, physician in chief; Dr. Francis H. McCrudden, laboratory director; Dr. Edward P. Richardson, surgeon; Dr. Charles F. Painter, orthopedic surgeon; Charles B. Lawson, assistant physician; William H. Miller, assistant surgeon; Lloyd T. Brown, assistant orthopedic surgeon.

NEW JERSEY

Burlington Fights River Pollution.—The State Board of Health and State Board of Water and Sewage back Burlington's fight to protect its drinking water from sewage pollution. The campaign of the State Board of Health to enforce the law against the pollution of the river from municipal sewer plants has been held up in the courts for seven years in the test case of the State of New Jersey vs. the City of Phillipsburg.

NEW MEXICO

Sanatorium Endorsed.—Chaves County Medical Society has unanimously endorsed a movement to secure for Roswell the sanatorium which the Methodist Episcopal Church, South, is contemplating building in the Southwest.

Personal.—Dr. John W. Colbert, Albuquerque, has been asked by the Rockefeller Foundation to assume charge of its research work in a campaign to be inaugurated for the eradication of hookworm disease in Central and South America.——Dr. M. M. Thompson, Logan, who suffered a fracture of the clavicle and other injuries by being thrown from a horse which he was breaking recently, has recovered.

Typhus Fever among Indians.—Under date of March 11, typhus fever was reported among the Pueblo Indians in the village of Canyon Cito Cojo, 40 miles west of Albuquerque. In all there were about fifteen cases, with two deaths. There are about 200 Indians in the settlement. The epidemic was reported by Dr. Lewis C. Day, physician at the local Indian school. Dr. Lucien G. Rice, chairman of the State Board of Health, instructed Dr. Walter W. Spargo, Albuquerque, to take charge of the situation. The sanitary conditions in the village are bad and vermin are plentiful.

NEW YORK

Personal.—Dr. Frederick W. Sears, health officer of Syracuse, has sailed for Europe.——Dr. Charles K. Winne, Jr., Albany, has been appointed medical assistant to the Bureau of Health.

Dental Dispensaries Approved.—The Board of Councilmen of Buffalo approved the action of the lower house in voting to provide $2,200 for the Health Department for the maintenance of two free dental dispensaries for the benefit of the public school children.

Medical Judge for Each County.—Under the terms of a bill presented to the senate by J. S. Seeley it is provided that each county in the state shall have a medical judge, who shall be a physician, with a salary of $3,500, and an allowance of $2,500 for expenses; that the duties of the medical judge shall be to attend all trials where medical evidence is given concerning the sanity of the defendant, and to advise the court and jury regarding the accuracy of the testimony.

Would Frame Its Own Health Code.—Members of the Rochester Health Commission desire to have the right to frame their own health code for the city, without interference from the State Health Council. The president of the commission, Dr. John W. Whitbeck, was authorized to attend the meeting of the State Health Council in order to present officially the request of the Rochester commission for exemption, and to ask the council to recommend such exemption to the senate and governor.

State Leases Ward's Island.—After several years' negotiations an agreement has been approved by New York state and the City of New York giving to the state a lease of Ward's Island for fifty years for the Manhattan State Hospital and transferring to the state the Long Island State Hospital, Brooklyn. The Manhattan State Hospital has been located on Ward's Island for many years without legal right, and during its occupancy of the island has spent $1,238.494 for improvements and repairs on buildings. The buildings and island are valued at $8,950,000. Under the terms of the lease the nominal rental of the property is one dollar a year for which the state is to reimburse the city by paying for such buildings as have been erected during the past ten years.

High Rural Death-Rate.—Grangers continue to call attention to the high rural death-rate in the state and to urge the passage of the Rural Hygiene Bill. They assert that had the death-rate in rural New York communities of less than 8,000 population been as low as that of New York City, 3,900 fewer persons would have died in the state. At a conservative estimate of $5,000 as the value of a human life the loss to the state for the year was $19,500,000. The bill provides for the creation of a division of rural hygiene in the State Department of Health, and offers the residents of rural New York the same protection which has reduced the city death-rate. Only $75,000 is asked for the bill, which it is pointed out is smaller than that spent by the state in experiments in roadmaking, forestry and other activities. The State Charities Aid Association is cooperating with the Grange in the effort to obtain this legislation.

New York City

Gold Medals for Jacobi and Osborn.—The National Institute of Social Sciences held a meeting at the New York Academy of Medicine on March 20, on which occasion gold medals were awarded to Dr. Abraham Jacobi and Prof. Henry Fairfield Osborn.

Railroad Employees Must Be Vaccinated.—Two cases of small-pox have been found among the employees of the Pennsylvania Railroad within a week. This has led Commissioner Goldwater to issue an order directing every employee of the Pennsylvania road on trains entering New York City to be vaccinated.

Personal.—Dr. Walter B. James has sailed for Madeira and the Mediterranean.——Dr. Thomas Darlington, formerly health commissioner of New York City, has been appointed a member of the Workmen's Compensation Commission.——Dr. T. Mitchell Prudden has been appointed a member of the State Public Health Council.

Montefiore Home Report.—The twenty-ninth annual report of the Montefiore Home for Chronic Invalids, which has removed to its new buildings during the past year, shows that 1,083 patients were provided for during the year, and that 472 remain under treatment at the end of the year. All save forty-three received free treatment. The receipts of the institution for the year from all sources amounted to $205,328 and the expenditures almost equaled that amount.

NORTH CAROLINA

Personal.—Dr. W. Thomas Parrott, Kinston, fractured his arm and two ribs while attempting to crank his motor-car near Kinston, and is under treatment at the McDaniel Memorial Hospital.

Democrats Yield to State Society.—The North Carolina Democratic executive committee arranged for the state corvention at Raleigh, June 17, the date on which the Medical Society of the State of North Carolina was to hold its meeting at Raleigh. The hotels of Raleigh protested that they could not entertain both bodies at the same time, and the committee courteously arranged to hold the political convention at a later date.

OHIO

Mouth Hygiene Campaign.—On the third day of the Mouth Hygiene Campaign in Cleveland, more than $18,000 toward the $75,000 desired was reported to have been subscribed.

Betterment of Insane.—A society was organized in Dayton, March 12, known as the "Friends of the Insane," which has for its object the betterment of the insane. Connecticut, Massachusetts, Maryland, New York and Illinois are said already to have organizations of this kind.

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PENNSYLVANIA

Appropriation for Sanatorium.—Berkes County has appropriated $1,000 for the Neversink Mountain Sanatorium.

Health Talks.—The last of the series of health lectures, given under the auspices of the Allegheny County Medical Society, was given at the East Liberty Branch of the Young Men's Christian Association, Pittsburgh, March 31, by Dr. Adolph Krebs on "The Care of the Eyes and Prevention of Blindness."

Alumni Banquet.—The ninth annual banquet of the Pennsylvania Branch of the Alumni Association of University of Maryland was held in Philadelphia March 19. The following officers were elected for the ensuing year: president, Dr. W. H. Lowell, Lancaster; vice-president, Dr. R. V. White, Scranton, and secretary-treasurer, J. C. C. Beale, Coaldale.

Small-Pox Isolated Town.—The town of Billmyer, between Lancaster and Columbia, has been isolated by the state health officials because of the prevalence of small-pox. The quarantine will last for twenty-eight days. The Pennsylvania Railroad has announced that the sale of tickets to Billmyer has been discontinued, and that trains will not stop there for the present.

Rittersville Fights Diphtheria.—A strict quarantine has been established at the Rittersville Hospital to prevent a spread of diphtheria at that institution. A woman patient, on a visit to her home, contracted the malady. An entertainment has been canceled, and for the present there will not be any religious services, no visitors will be allowed, no new patients received and none discharged.

New Societies.—The physicians and dentists of the lower Allegheny Valley have reorganized the Allegheny Valley Branch of the Allegheny County Medical Society, and have elected Dr. John W. Goodsell, president, and Dr. Albert S. Kaufman, secretary, both of New Kensington.——The Hygienic Section of the Pittsburgh Academy of Science and Art was organized March 10, and Surgeon James B. Stoner, United States Public Health Service, was elected president.

Norristown to Fight Scarlet Fever.—With the number of cases of scarlet fever increasing, the Norristown Board of Health, March 18, decided to stamp out the disease by employing doctors to visit every child absent from the various public and private schools to ascertain the cause of illness rather than by closing the schools. There have been seventy-eight cases reported since the first of the year, and the health officer believes that parents are taking chances rather than be quarantined.

Railroad Demands Strictly Temperate Employees.—The Pennsylvania Railroad has a strict rule, which is rigidly enforced. It reads: "The use of intoxicants by employees while on duty is prohibited. Their habitual use or the frequenting of places where they are sold is sufficient cause for dismissal." In a statement issued March 19, the company gave the information that 784,670 observations were made during 1913 as to the use of intoxicants by employees, and that in only 158 cases was discipline required.

Personal.—Dr. Ellis M. Frost, Pittsburgh, instructor in the division of clinical medicine and microscopic anatomy in the School of Medicine of the University of Pittsburgh, has been appointed director of the Department of Health of the university, to date from February 15. The department planned to lay great stress on the preventive side of student life disease. A suite of rooms has been equipped in the Tree gymnasium, where the director will have daily office hours for consultation by the students.——Dr. Raymond A. Dangler, Gilberton, has been appointed medical examiner of the Lehigh Valley Railroad.——Dr. Clarence R. Phillips, Harrisburg, has been appointed State Health Inspector for Dauphin County.

Philadelphia

Plans for Clean-Up Week.—On March 19 a meeting of the citizens committee was held at the mayor's office for the purpose of forming plans for a city-wide clean-up week, from April 20 to 28, which will reach every person living in this city.

Monod in Philadelphia.—Dr. Gustave Monod, Paris, commissioned by the French government to report on postgraduate teaching in America, delivered an address, March 27, at a special meeting of the College of Physicians of Philadelphia on "Post-Graduate Study in Paris."

Medical Students Certified as Interns.—Sixty medical students to be graduated from the city's medical schools this spring were certified by the Civil Service Commission as successfully passing the examination qualifying them for appointment as intern at the Philadelphia General Hospital, as vacancies occur.

Rush Society Lecture.—The eighth Rush Society Lecture, which is also the annual address to the Undergraduate Medical Society of the University of Pennsylvania, will be delivered in Lecture Room B of the New Medical Laboratory of the university, April 1, at 3:30, by Dr. Alexis Carrel of the Rockefeller Institute for Medical Research, on "Permanent Active Life of the Tissues Outside the Organism."

Conference on the Wrapping of Bread.—At another conference, March 18, of the representatives of the Women's Civic Organizations with the acting head of the Health Department, Director Wilson, and State Dairy and Food Commissioner Faust, it was found that while paper wrapping on bread was a public need, the law was not specific enough to force its use. No successful prosecution could be conducted under the present law where bread was sold without a wrapper, because it was impossible from a chemical and bacteriologic point of view to prove that bread was contaminated by handling.

Meat Men Must Obtain Licenses.—The division of meat inspection of the Department of Health has issued a warning that vendors of and dealers in meat and fish must make immediate application for licenses or be prosecuted. Nearly three thousand have been tardy in this respect. Every year many dealers, such as hucksters and street vendors, try to elude this law, so a special crusade will be made against these men. No licenses have been issued to the members of the Jewish Poultry Slaughters Association, comprising about fifty men, and none will be issued until arrangements have been made for sanitary slaughter-houses.

Personal.—Dr. Alexander C. Abbott, Professor of Hygiene and Bacteriology at the University of Pennsylvania, delivered a course of three lectures on the "Control of Contagious Diseases" before the United States Army Medical School, in Washington, D. C., on March 16, 17 and 19.——Dr. William H. Walsh, medical superintendent of the Philadelphia Hospital for Contagious Diseases, has succeeded the late Dr. Henry Sykes as chief resident of the Philadelphia General Hospital.——Dr. James R. Martin has been appointed assistant orthopedic surgeon to the Outpatient Department of the Jewish Hospital.——Dr. Joseph F. Neff, director of the Department of Public Health and Charities, who has been ill for three months, has returned to Philadelphia and resumed practice, March 17.——Dr. J. William White has returned from a trip to the Orient.——Dr. J. Monroe Campbell has been appointed chief of the division of the biologic products of the State Board of Health at Harrisburg.

TEXAS

County Health Officer Not a Salaried Position.—The attorney general's department rendered a decision that county commissioners are authorized to pay county health officers only for services actually performed, and that no regular salary can be given them.

Clean-Up Day.—March 10 was officially observed as Clean-Up Day throughout the state. In the official proclamation announcing this, Dr. Ralph Steiner, Austin, State Health Officer, asked all health societies, state and county authorities and women's clubs to observe the day and rid the state of filth and its products.

Small-Pox on the Border.—On account of the great influx of Mexicans into southwestern Texas because of the revolution in Mexico, small-pox has been very prevalent, and the local health authorities along the border have set on foot a movement to induce the federal government to have the Army medical authorities along the border vaccinate all Mexicans arriving in the state. The local health authorities will also ask the cooperation of the State Board in combatting small-pox.

Personal.—J. F. Bailey, Waco, has succeeded J. H. Evans, deceased, as president of the Texas Board of Medical Examiners.——Dr. Charles W. Truehart, Galveston, a veteran physician of Texas, who has recently moved to San Antonio, has been made an honorary member of the Bexar County Medical Society.——Dr. Joseph H. Reuss, Cuero, chief surgeon of the San Antonio and Aransas Pass Railway, has been provided by the railroad with a motor-car for his personal use.——Dr. Ervin P. Hall, Fort Worth, was operated for appendicitis at the St. Joseph's Infirmary in that city.

New Officers.—Milan County Medical Society at Cameron, March 10: president, Dr. Hiram F. Coulter, Rockdale; secretary, Dr. Green Taylor, Cameron.——Jim Wells County Medical Association organized at Alice, March 3: president, Dr. J. S. Strickland; secretary-treasurer, Dr. M. J. Perkins, both of Alice.——Bowie County Health Society, organized at Texarkana, February 26, for the purpose of securing a county hospital: president, Dr. Lucien H. Lanier; secretary, Dr. J. K. Smith, both of Texarkana.——Scurry County Medical Society, reorganized at Snyder recently: president Dr. William R. Johnson, Snyder; secretary, Luther E. Trigg, Hermleigh.

Hospital and Sanatorium News.—The Bexar County Medical Society, at its meeting, March 12, adopted a resolution endorsing a city and county hospital.——The Harris Sanatorium for Tuberculosis has been opened in San Antonio.——By unanimous vote of the county officers, the Physicians' and Surgeons' Hospital, Dallas and Reynolds Streets, San Antonio, has been purchased for Bexar County for $75,000. It is contemplated to add a wing to the building at a cost of $5,000. The building will be known as the Bexar County Hospital, and will be under the care of Dr. Dabney Berrey, county health commissioner.——The McClinnon County Medical Society has asked the county officers to order bonds for $20,000 to procure a county hospital.

UTAH

New Officers.—Utah County Medical Society at Provo: president, Dr. Lyon D. Stewart, Payson; secretary-treasurer, Dr. Herbert S. Pyne, Provo (reelected).

State Board Appointments.—The governor has reappointed Dr. William R. Calderwood, Salt Lake City, a member of the State Board of Health, and has appointed Dr. Claude E. McDermid, Sunnyside, a member to succeed Dr. David O. Miner, Nephi, removed from the state.

Personal.—Dr. Hardie Lynch, City Bacteriologist of Salt Lake City, was operated on for appendicitis at St. Mark's Hospital recently.——Dr. Carlyle K. MacMurdy, Ogden, has returned after an absence of several months in New York City.——Dr. Eugene H. Smith and family, Ogden, have returned from Europe.

WEST VIRGINIA

Medical Society Organized.—The Cabell County Medical Society was incorporated at Huntington recently, with a capital stock of $500, by Drs. Frederick A. Fitch, James R. Bloss, Lindsey J. Vinson, A. Kenton Kessler and William E. Neal, all of Huntington.

Dispensary Staff Appointed.—The following officers and physicians are in charge of the dispensary of the Ohio County Antituberculosis League: J. Edward Burns, John W. Gilmore, Robert U. Drinkard, Charles M. Truschel, Thurman Gillespy and Aron V. Weinberger, all of Wheeling.

Red Cross Chapter Organized.—At a meeting held in Wheeling recently, a chapter of the American National Red Cross was organized, with an additional membership of 100. Dr. Charles A. Wingerter was elected a vice-president and Dr. Eugenius Hildreth II a member of the executive committee.

Personal.—Dr. Theodore K. Oates, chief surgeon of the Martinsburg City Hospital, has been appointed a member of the surgical staff of the Baltimore and Ohio Railroad.——Dr. Louis D. Wilson has been appointed dean of the medical staff of the new Ohio Valley General Hospital, Wheeling.——Dr. Asahel C. Lambert, Red House, has opened a hospital at Charleston.

WISCONSIN

New Officers.—Jefferson County Medical Society at Fort Atkinson, February 27: president, Dr. Charles S. Carmichael, Helenville; secretary, Dr. Carl R. Feld, Watertown.

West Allis Sanatorium.—Land for the West Allis Hospital will soon be broken. The central building and one wing will be built at present at a cost of $24,000 and will accommodate forty patients.

More Land for Sanatorium.—The joint committee of the common council on finance and buildings and grounds has recommended the purchase of 15 acres of land for an addition to the Blue Mound Sanatorium for Tuberculosis.

State Board Dispenses Nitrate of Silver.—The State Board of Health, March 18, sent out 3,000 packages of nitrate of silver, each containing 24 ampoules, to physicians in the state. This has been done under the law passed by the last legislature which provides that the eyes of new-born children must be washed at birth with nitrate of silver solution to prevent blindness.

GENERAL

Health Conference in Southern States.—On April 24 there will be held in New Orleans a conference of the health and educational officers of the Southern states under the auspices of the Louisiana State Board of Health. The conference will consider especially the formulation of a plan for concerted action for the betterment of health conditions and the eradication of tuberculosis among negroes. Efforts are being made to secure special railroad rates, and further information will appear later.

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Appropriation for Sanatorium.—Berkes County has appropriated $1,000 for the Neversink Mountain Sanatorium.

Health Talks.—The last of the series of health lectures, given under the auspices of the Allegheny County Medical Society, was given at the East Liberty Branch of the Young Men's Christian Association, Pittsburgh, March 31, by Dr. Adolph Krebs on "The Care of the Eyes and Prevention of Blindness."

Alumni Banquet.—The ninth annual banquet of the Pennsylvania Branch of the Alumni Association of University of Maryland was held in Philadelphia March 19. The following officers were elected for the ensuing year: president, Dr. W. H. Lowell, Lancaster; vice-president, Dr. R. V. White, Scranton, and secretary-treasurer, J. C. C. Beale, Coaldale.

Small-Pox Isolated Town.—The town of Billmyer, between Lancaster and Columbia, has been isolated by the state health officials because of the prevalence of small-pox. The quarantine will last for twenty-eight days. The Pennsylvania Railroad has announced that the sale of tickets to Billmyer has been discontinued, and that trains will not stop there for the present.

Rittersville Fights Diphtheria.—A strict quarantine has been established at the Rittersville Hospital to prevent a spread of diphtheria at that institution. A woman patient, on a visit to her home, contracted the malady. An entertainment has been canceled, and for the present there will not be any religious services, no visitors will be allowed, no new patients received and none discharged.

New Societies.—The physicians and dentists of the lower Allegheny Valley have reorganized the Allegheny Valley Branch of the Allegheny County Medical Society, and have elected Dr. John W. Goodsell, president, and Dr. Albert S. Kaufman, secretary, both of New Kensington.——The Hygienic Section of the Pittsburgh Academy of Science and Art was organized March 10, and Surgeon James B. Stoner, United States Public Health Service, was elected president.

Norristown to Fight Scarlet Fever.—With the number of cases of scarlet fever increasing, the Norristown Board of Health, March 18, decided to stamp out the disease by employing doctors to visit every child absent from the various public and private schools to ascertain the cause of illness rather than by closing the schools. There have been seventy-eight cases reported since the first of the year, and the health officer believes that parents are taking chances rather than be quarantined.

Railroad Demands Strictly Temperate Employees.—The Pennsylvania Railroad has a strict rule, which is rigidly enforced. It reads: "The use of intoxicants by employees while on duty is prohibited. Their habitual use or the frequenting of places where they are sold is sufficient cause for dismissal." In a statement issued March 19, the company gave the information that 784,670 observations were made during 1913 as to the use of intoxicants by employees, and that in only 158 cases was discipline required.

Personal.—Dr. Ellis M. Frost, Pittsburgh, instructor in the division of clinical medicine and microscopic anatomy in the School of Medicine of the University of Pittsburgh, has been appointed director of the Department of Health of the university, to date from February 15. The department planned to lay great stress on the preventive side of student life disease. A suite of rooms has been equipped in the Tree gymnasium, where the director will have daily office hours for consultation by the students.——Dr. Raymond A. Dangler, Gilberton, has been appointed medical examiner of the Lehigh Valley Railroad.——Dr. Clarence R. Phillips, Harrisburg, has been appointed State Health Inspector for Dauphin County.

Philadelphia

Plans for Clean-Up Week.—On March 19 a meeting of the citizens committee was held at the mayor's office for the purpose of forming plans for a city-wide clean-up week, from April 20 to 28, which will reach every person living in this city.

Monod in Philadelphia.—Dr. Gustave Monod, Paris, commissioned by the French government to report on postgraduate teaching in America, delivered an address, March 27, at a special meeting of the College of Physicians of Philadelphia on "Post-Graduate Study in Paris."

Medical Students Certified as Interns.—Sixty medical students to be graduated from the city's medical schools this spring were certified by the Civil Service Commission as successfully passing the examination qualifying them for appointment as intern at the Philadelphia General Hospital, as vacancies occur.

Rush Society Lecture.—The eighth Rush Society Lecture, which is also the annual address to the Undergraduate Medical Society of the University of Pennsylvania, will be delivered in Lecture Room B of the New Medical Laboratory of the university, April 1, at 3:30, by Dr. Alexis Carrel of the Rockefeller Institute for Medical Research, on "Permanent Active Life of the Tissues Outside the Organism."

Conference on the Wrapping of Bread.—At another conference, March 18, of the representatives of the Women's Civic Organizations with the acting head of the Health Department, Director Wilson, and State Dairy and Food Commissioner Faust, it was found that while paper wrapping on bread was a public need, the law was not specific enough to force its use. No successful prosecution could be conducted under the present law where bread was sold without a wrapper, because it was impossible from a chemical and bacteriologic point of view to prove that bread was contaminated by handling.

Meat Men Must Obtain Licenses.—The division of meat inspection of the Department of Health has issued a warning that vendors of and dealers in meat and fish must make immediate application for licenses or be prosecuted. Nearly three thousand have been tardy in this respect. Every year many dealers, such as hucksters and street vendors, try to elude this law, so a special crusade will be made against these men. No licenses have been issued to the members of the Jewish Poultry Slaughters Association, comprising about fifty men, and none will be issued until arrangements have been made for sanitary slaughter-houses.

Personal.—Dr. Alexander C. Abbott, Professor of Hygiene and Bacteriology at the University of Pennsylvania, delivered a course of three lectures on the "Control of Contagious Diseases" before the United States Army Medical School, in Washington, D. C., on March 16, 17 and 19.——Dr. William H. Walsh, medical superintendent of the Philadelphia Hospital for Contagious Diseases, has succeeded the late Dr. Henry Sykes as chief resident of the Philadelphia General Hospital.——Dr. James R. Martin has been appointed assistant orthopedic surgeon to the Outpatient Department of the Jewish Hospital.——Dr. Joseph F. Neff, director of the Department of Public Health and Charities, who has been ill for three months, has returned to Philadelphia and resumed practice, March 17.——Dr. J. William White has returned from a trip to the Orient.——Dr. J. Monroe Campbell has been appointed chief of the division of the biologic products of the State Board of Health at Harrisburg.

TEXAS

County Health Officer Not a Salaried Position.—The attorney general's department rendered a decision that county commissioners are authorized to pay county health officers only for services actually performed, and that no regular salary can be given them.

Clean-Up Day.—March 10 was officially observed as Clean-Up Day throughout the state. In the official proclamation announcing this, Dr. Ralph Steiner, Austin, State Health Officer, asked all health societies, state and county authorities and women's clubs to observe the day and rid the state of filth and its products.

Small-Pox on the Border.—On account of the great influx of Mexicans into southwestern Texas because of the revolution in Mexico, small-pox has been very prevalent, and the local health authorities along the border have set on foot a movement to induce the federal government to have the Army medical authorities along the border vaccinate all Mexicans arriving in the state. The local health authorities will also ask the cooperation of the State Board in combatting small-pox.

Personal.—J. F. Bailey, Waco, has succeeded J. H. Evans, deceased, as president of the Texas Board of Medical Examiners.——Dr. Charles W. Truehart, Galveston, a veteran physician of Texas, who has recently moved to San Antonio, has been made an honorary member of the Bexar County Medical Society.——Dr. Joseph H. Reuss, Cuero, chief surgeon of the San Antonio and Aransas Pass Railway, has been provided by the railroad with a motor-car for his personal use.——Dr. Ervin P. Hall, Fort Worth, was operated for appendicitis at the St. Joseph's Infirmary in that city.

New Officers.—Milan County Medical Society at Cameron, March 10: president, Dr. Hiram F. Coulter, Rockdale; secretary, Dr. Green Taylor, Cameron.——Jim Wells County Medical Association organized at Alice, March 3: president, Dr. J. S. Strickland; secretary-treasurer, Dr. M. J. Perkins, both of Alice.——Bowie County Health Society, organized at Texarkana, February 26, for the purpose of securing a county hospital: president, Dr. Lucien H. Lanier; secretary, Dr. J. K. Smith, both of Texarkana.——Scurry County Medical Society, reorganized at Snyder recently: president Dr. William R. Johnson, Snyder; secretary, Luther E. Trigg, Hermleigh.

Hospital and Sanatorium News.—The Bexar County Medical Society, at its meeting, March 12, adopted a resolution endorsing a city and county hospital.——The Harris Sanatorium for Tuberculosis has been opened in San Antonio.——By unanimous vote of the county officers, the Physicians' and Surgeons' Hospital, Dallas and Reynolds Streets, San Antonio, has been purchased for Bexar County for $75,000. It is contemplated to add a wing to the building at a cost of $5,000. The building will be known as the Bexar County Hospital, and will be under the care of Dr. Dabney Berrey, county health commissioner.——The McClinnon County Medical Society has asked the county officers to order bonds for $20,000 to procure a county hospital.

UTAH

New Officers.—Utah County Medical Society at Provo: president, Dr. Lyon D. Stewart, Payson; secretary-treasurer, Dr. Herbert S. Pyne, Provo (reelected).

State Board Appointments.—The governor has reappointed Dr. William R. Calderwood, Salt Lake City, a member of the State Board of Health, and has appointed Dr. Claude E. McDermid, Sunnyside, a member to succeed Dr. David O. Miner, Nephi, removed from the state.

Personal.—Dr. Hardie Lynch, City Bacteriologist of Salt Lake City, was operated on for appendicitis at St. Mark's Hospital recently.——Dr. Carlyle K. MacMurdy, Ogden, has returned after an absence of several months in New York City.——Dr. Eugene H. Smith and family, Ogden, have returned from Europe.

WEST VIRGINIA

Medical Society Organized.—The Cabell County Medical Society was incorporated at Huntington recently, with a capital stock of $500, by Drs. Frederick A. Fitch, James R. Bloss, Lindsey J. Vinson, A. Kenton Kessler and William E. Neal, all of Huntington.

Dispensary Staff Appointed.—The following officers and physicians are in charge of the dispensary of the Ohio County Antituberculosis League: J. Edward Burns, John W. Gilmore, Robert U. Drinkard, Charles M. Truschel, Thurman Gillespy and Aron V. Weinberger, all of Wheeling.

Red Cross Chapter Organized.—At a meeting held in Wheeling recently, a chapter of the American National Red Cross was organized, with an additional membership of 100. Dr. Charles A. Wingerter was elected a vice-president and Dr. Eugenius Hildreth II a member of the executive committee.

Personal.—Dr. Theodore K. Oates, chief surgeon of the Martinsburg City Hospital, has been appointed a member of the surgical staff of the Baltimore and Ohio Railroad.——Dr. Louis D. Wilson has been appointed dean of the medical staff of the new Ohio Valley General Hospital, Wheeling.——Dr. Asahel C. Lambert, Red House, has opened a hospital at Charleston.

WISCONSIN

New Officers.—Jefferson County Medical Society at Fort Atkinson, February 27: president, Dr. Charles S. Carmichael, Helenville; secretary, Dr. Carl R. Feld, Watertown.

West Allis Sanatorium.—Land for the West Allis Hospital will soon be broken. The central building and one wing will be built at present at a cost of $24,000 and will accommodate forty patients.

More Land for Sanatorium.—The joint committee of the common council on finance and buildings and grounds has recommended the purchase of 15 acres of land for an addition to the Blue Mound Sanatorium for Tuberculosis.

State Board Dispenses Nitrate of Silver.—The State Board of Health, March 18, sent out 3,000 packages of nitrate of silver, each containing 24 ampoules, to physicians in the state. This has been done under the law passed by the last legislature which provides that the eyes of new-born children must be washed at birth with nitrate of silver solution to prevent blindness.

GENERAL

Health Conference in Southern States.—On April 24 there will be held in New Orleans a conference of the health and educational officers of the Southern states under the auspices of the Louisiana State Board of Health. The conference will consider especially the formulation of a plan for concerted action for the betterment of health conditions and the eradication of tuberculosis among negroes. Efforts are being made to secure special railroad rates, and further information will appear later.

Control of Cancer.—On April 11, at 11 a. m., Mr. Frederick A. Hoffmann, statistician of the Prudential Insurance Company, will deliver a lecture in the Hudson Theater, New York City, under the auspices of the American Society for the Control of Cancer, on "The Menace and Control of Cancer."

Dining-Car Employees Inspected.—By order of the St. Louis and Southwestern Railway, all employees connected with the dining-car service of the road were inspected, with the result that one, found to be suffering from a communicable disease, was removed from the service.

Insurance Items.—The Equitable Life Insurance Company of New York announces that beginning July 1 it will hold free examinations for policy-holders at central points where it has salaried physicians.——A group of Lloyd underwriters has fixed a premium of $5 for policies against appendicitis, covering all claims for expenses up to $500.

Medical Mission Propaganda.—The Medical Mission Propaganda, under the auspices of the Catholic Foreign Mission Society has been founded to establish and support medical mission work in the Far East. The primary endeavor is to support and encourage existing missions and to disseminate suitable medical literature and gratuitous medical supplies, and later to establish dispensaries and hospitals. Physicians, nurses and others who would like to assist are requested to communicate with "Physician," care *Field Afar Magazine*, Ossining P. O., N. Y.

Bequests and Donations.—The following bequests and donations have recently been announced:

Washington University Medical School, St. Louis, $150,000, by the will of Adolphus Busch.

Women's Medical College of Pennsylvania, Philadelphia, a donation of $10,000, by an anonymous benefactor.

Infants' Hospital, in connection with the Thomas Morgan Rotch Jr., Memorial Hospital, Boston, the income from the largest part of the estate of Dr. Thomas Morgan Rotch, after the death of his wife.

Thomas Morgan Rotch professorship in Pediatrics at Harvard Medical School, established by the will of Dr. Thomas Morgan Rotch.

The German Hospital and St. Catherine's Hospital, New York City, each $5,000 by the will of Louis Bossert.

Hospital for Diphtheria and Scarlet Fever, New York City, $15,000 by the will of Mrs. John W. Minturn.

Presbyterian Hospital, New York City, $40,000 for the endowment of free beds, by the will of Mrs. Minnie Hackett Trowbridge.

FOREIGN

In Honor of Ehrlich.—The last number of the *Münchener med. Wochenschrift* is a special issue in honor of the sixtieth birthday of Professor Ehrlich, March 14. All of the numerous articles, with one exception, are on experiences with salvarsan, looking back over the three years since it was introduced.

Plague on the West Coast.—According to the report of the Department of Sanitation of the Canal Zone for January, plague conditions on the west coast of South America are worse than they had been at any time during the previous three years. Plague has extended up the coast from Guayaquil, and all Ecuadorian ports are said to be infected. A number of cases of plague occurred at both Bahia and Manta. The latter port is within two days' sail of Panama. At Guayaquil, although there was a slight diminution in the number of cases, the plague situation remained bad and yellow fever had increased. Plague is also reported to have increased in all the ports of Peru and also in Iquique, Chile. Plague conditions at Brighton, Trinidad, had improved. Only one new case of yellow fever appeared at Trinidad during the month.

CANADA

Tuberculosis Convention.—The fourteenth annual convention of the Canadian Association for the Prevention of Tuberculosis will be held in Halifax, N. S., July 13 and 14, following the meeting of the Canadian Medical Association at St. John, N. B.

Personal.—Dr. A. L. C. Gilday, Montreal, has returned from England and the continent.——Dr. George A. Morphy, Montreal, has gone to the Mediterranean.——Dr. Fred Pelletier, Montreal, has been appointed secretary of the Montreal Board of Health.

Hospital News.—The Alexandria and Marine Hospital, Goderich, Ontario, will receive a grant from the town of $15,000 to fit up and enlarge and equip the present building. ——The federal government will consider establishing a new marine hospital and house of refuge for sailors at Iverhuron, Lake Huron.

Sanitary Inspectors Organize.—The Association of Sanitary Inspectors of Western Canada was formed April 19, 1913, in the city of Winnipeg. It now has a membership of eighty-seven, nearly all in active service as inspectors from Fort William to the Coast. The next annual meeting will be held in Winnipeg in July.

Leper in Winnipeg.—A leprosy patient was discovered in Winnipeg two weeks ago. He had been in the city three weeks, and had come from Saskatchewan. He is housed temporarily in an isolated building near the Winnipeg General Hospital. The health authorities of Saskatchewan have been asked to arrange for deporting from Manitoba. He will probably be sent to one of the government lazarettos.

Medical Inspection of Schools in Montreal.—This is under the direction and control of the Board of Health. Up to the present time there have been nineteen districts with a medical inspector in charge of each district. Each medical inspector receives a salary of $1,400 per annum for work from 9 a. m. to 5 p. m. There are 254 schools, with 85,000 pupils. Each medical inspector has an average of thirteen schools. Through medical inspection pediculosis and scabies have almost disappeared, and there has been a great diminution of contagious diseases. It is likely, under the reorganization of the department of health now in process, that the medical inspectors will devote all their time to the work on increased remuneration, and that the number of school nurses will be increased from seven to fifteen or more.

Syphilis in Toronto.—The subject of syphilis was recently discussed by the sections of Medicine and State Medicine in the Academy of Medicine, Toronto. Dr. Joseph S. Graham reported that in the Toronto General Hospital from Aug. 11 to Dec. 13, 1913, there were treated a total of 412 patients; and it was proved by the Wassermann reaction that 180 had syphilis. Dr. Robert W. Mann gave records of cases in St. Michael's Hospital for three months. Of 286 public ward cases, 158 men gave 57.5 per cent. positive reaction and the women 64.5 per cent. Drs. Gordon S. Bates and George S. Strathy reported on 1,200 patients on whom they had made the test. These cases were taken from the Hospital for Sick Children, Toronto, and the Hospital for Feeble-Minded, Orillia, Ontario. At the Children's Hospital they tested and found positive the parents of thirty-seven suspected syphilitic children, twenty-five giving no history of syphilis. At the Orillia Institution 100 patients were tested; three were positive. Thirty defective children were tested at the Children's Hospital; no reaction except two juvenile paretics. From their work they come to the conclusion that syphilis plays but a small part in feeble-mindedness. Altogether they found positive results in 453 cases not infected innocently; 100 of these were from the Toronto Hospital for the Insane and seventeen from the Hospital for Incurables. In the Hospital for the Insane, ninety-five were cases of general paralysis.——In the Toronto Hospital for Insane, in 1910, forty-one cases of paresis were admitted, 13.66 per cent. of total admissions; in 1911, thirty-seven cases, 11.85 per cent. of total admissions; 1912, twenty cases, 6.09 per cent.; 1913, thirteen cases, 3.73 per cent. In 1910 paretics formed 25.6 per cent. of total male admissions; female, 2 per cent.; in 1911, 19.4 per cent. of male admissions; female, 4 per cent.; in 1912, 8.3 per cent. of total males; female, 3 3 per cent.; in 1913, 6 per cent. of total male; female, 1.7 per cent. of total female admissions.

LONDON LETTER

(*From Our Regular Correspondent*)

London, March 6, 1914.

The Pains of Death

A curious correspondence has been going on in the *Times* on the subject of "The Pains of Death." Of course that dying is a painful process is a popular and not a medical belief. The difficult breathing often present in the dying suggests to the anxious friends a struggle which must be painful. They overlook the fact that the accompanying asphyxia produces stupor which ends in coma. Several lay correspondents have written to the *Times* stating the experiences of friends who reached an advanced stage of asphyxia and yet recovered to assure them that they suffered no pain. One eminent member of the profession, Sir Henry Morris, ex-president of the Royal College of Surgeons, has made a very practical suggestion which, though not new, is not so well known as it should be. He points out how easy it is to relieve the difficult breathing witnessed in many conditions such as heart-failure, apoplexy, compression of the brain, cancer causing fixation of the chest wall or involving the glands of the neck, drowning, some cases of chloroform poisoning, and regurgitation of some of the contents of the stomach in persons unconscious. The noisy snoring or stertorous breathing in these conditions is the immediate result of a local mechanical condition—palsy of the short palate, falling back of the tongue over the top of the pharynx, or the presence of mucus or other fluids in the larger air-tubes. This condition may be changed to the great relief of the distressed friends, and sometimes to permanent recovery, by turning and keeping the patient on one side; when paralysis exists the paralyzed side should be downward. The lateral posture permits the tongue to come forward and to one side. If the chin is dropped it should be held up. The lateral posture also allows mucus or other fluids to escape between the lips as well as to gravitate into and fill up the lower lung, to the great relief of the upper lung, whereby quiet respiration can be carried on. The lung is not permanently injured by remaining inactive and filled with mucus or water for a considerable period, but there is great danger in reversing the sides and thus allowing the fluid to cross from one lung to the other. Sir Henry Morris thinks that in some cases of apoplexy patients have died by suffocation from being kept on their backs rather than from the damage to the brain, and that had they been placed and kept on the paralyzed side and respiration thus facilitated, the brain injury would have had time to become repaired and the patients might have recovered. These facts were first pointed out in a communication to the Royal Medical and Chirurgical Society by the late Dr. Robert L. Bowles, and were published in the *Transactions* of the society in 1860.

The Royal Commission on Venereal Diseases

At the seventeenth meeting of the Royal Commission on Venereal Diseases, evidence was given by Dr. S. Coupland and Dr. C. H. Bond, commissioners in lunacy. They stated that since 1876 there had been a gradual rise in the proportion of syphilitics admitted to asylums, but it could not be inferred that this denoted increasing prevalence of syphilis. It might be due to better diagnosis. Throughout the whole period there had been a preponderance in the proportion of male cases in the private over that in the pauper class, and generally a similar preponderance in females of the pauper class over the private. For the period 1908-1912, of the male admissions 11.8 per cent. of the private and 8.7 per cent. of the pauper cases were syphilitics; for females the corresponding figures were 0.7 and 1.4 per cent.

At the eighteenth meeting Sir Thomas Barlow, president of the Royal College of Physicians, dealt with the importance of congenital syphilis as a hindrance to the birth-rate and to healthy development. The life of congenitally syphilitic children at school, especially among the humbler classes, was most unpromising, and many of them became useless members of society. They were liable to convulsions, which might inaugurate serious disease of the brain. The ideal method of treatment given a syphilitic infant would be that both parents should be under supervision and medical inspection at frequent intervals, and other children subsequently born should be inspected at frequent intervals for several years. It was very difficult to estimate whether venereal diseases were less prevalent than formerly; but apparent general improvement in morality in time ought to produce a diminution of the diseases. Special education was desirable. Special teaching on sexual conditions to women had been given in Western Canada without any offense whatever. Sir Thomas was not in favor of notification. There was much more hope from general enlightenment and facilities for effective treatment in the early stages. He also advocated strongly the subsidization by the government of pathologic research.

The Biology of the Rat-Flea

Owing to the importance the common rat-flea of Great Britain has assumed in the importation of plague, it has been the subject of investigation, under government auspices, by Mr. Strickland, who has made a careful study of its life and habits. The eggs hatch out after an incubation period of from five to fourteen days. This period is little influenced by variations of temperature or humidity. On the other hand, the larva lives best in moist surroundings, as does the unfed adult imago. A comparatively low temperature is also advantageous. The larvae feed on excrement or blood indiscriminately. At this stage light is deleterious and proves rapidly fatal. Under favorable conditions the pupal stage lasts seventeen days, but may be prolonged for months. It is prolonged by cold. It was found that the flea would readily feed on man, even more readily than on the rat, but, curiously, not till the flea has fed on rat's blood can copulation and oviposition take place. Rat's blood therefore seems to contain a substance stimulating to the sexual organs of the flea. When unfed the animal will live for at least seventeen months in rubbish. In the absence of rubbish it will live at the longest for about a month.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, March 6, 1914.

Alcoholism and Mortality

M. Henri Schmidt, deputy from the Vosges and president of the society known as "L'Alarme," which, as explained in THE JOURNAL, Feb. 28, 1914, was formed to combat alcoholism, has published an interesting article in which he shows the influence of alcoholism on mortality. The mere examination of the tables of the consumption of alcohol by departments and the distribution of deaths from tuberculosis shows clearly that alcoholism is an essential factor among all the other causes. It is the non-alcoholic regions of France which show the smallest number of deaths from tuberculosis (1.95 per thousand inhabitants for the years 1906, 1907 and 1908). The west, in which there is a heavy consumption of alcohol, gives the proportion of 2.61 per thousand, and the maximum (4.54) is given by the Parisian region in which the influence of alcohol is supplemented by those of unhealthful housing and a fatiguing life.

From other causes there are more deaths in the west than in the non-alcoholic regions, both in the city and in the country. Infant mortality is particularly high in the west owing to various causes: hereditary weakness, insufficient maternal care and bad food. Alcohol is sometimes put in the nursing-bottle. It is in Normandy that the greatest number of alcoholic women is found. The infant mortality was about 11.6 in 1906 in le Gers and about 22.2 in the Seine-Inférieure. It is also in the regions where there is a heavy consumption of alcohol and absinthe that the largest portion of still-births occur. Schmidt has calculated the following average for the period 1874-1904:

DEATHS FOR EACH THOUSAND CONCEPTIONS

	1874-1884	1885-1894	1895-1904
Non-alcoholic region	3.43	3.65	3.80
Alcoholic region	4.33	4.66	4.46
Southern departments (absinthe)	4.99	5.41	5.69

Operation on a Xiphopagus

Dr. Le Filliâtre has just operated successfully on a xiphopagus, Suzanne-Madeleine. The little girls were three months and four days old and in perfect health. Their combined weight was 6.5 kg. (14 pounds). Local anesthesia was used, 4.5 mg. of cocain being injected in four injections of a 1:500 solution. The connecting bridge of tissue, having been painted with tincture of iodin, was severed. As the previous Roentgen-ray examination had indicated, there was no intestinal connection. There was, however, a communicating strip of liver-tissue which had to be crushed. A portion of intestine of one of the infants, covered with peritoneum, made a hernia in the abdomen of her sister.

Salvarsan for the Treatment of Tuberculous Syphilitics

The use of salvarsan and neosalvarsan for tuberculous syphilitics was the subject of an interesting discussion at the last two sessions of the Société médicale des hôpitaux de Paris. Dr. Jeanselme, *agrégé* professor, with Drs. Vernes and Bloch, reported thirteen cases of syphilis in tuberculous patients treated by injections of salvarsan. There was no hemoptysis in any of the patients no matter how advanced the lesions. The treatment did not hasten or aggravate the lesions. It even seemed to be efficacious for tuberculosis of the first and second stages. Jeanselme believes that in syphilitics affected with chronic pulmonary tuberculosis, provided that they are not in the cachectic period, injections of very small doses of salvarsan constitute the treatment of choice. On the other hand, this treatment should not be used for patients affected with rapidly progressing tuberculosis.

Dr. Leon Bernard, *agrégé* professor, with Dr. Paraf, gave injections of neosalvarsan to eight tuberculous syphilitics with no unfavorable results. Four patients were non-cachectic tuberculous patients with cutaneous or nervous syphilitic manifestations. In these four the effects of the treatment were excellent, both on the syphilitic lesions and on the general condition and the evolution of tuberculosis. Another case was one of cachectic tuberculosis with cavities. The neosalvarsan improved the syphilitic manifestations without modifying the course of tuberculosis. The other cases were cases of old syphilis in tuberculous patients with cavities. Not one of these was improved by the arsenical treatment.

According to Dr. Sergent, many cases of tuberculosis among syphilitics are hybrid lesions, half tuberculous and half syphilitic.

This explains the good effects of salvarsan in some patients, for this drug reduces the syphilitic element in the lesions without affecting the actual tuberculosis element.

Treatment of Arterial Hypertension by Irradiation of the Adrenals

At the last session of the Société médicale des hôpitaux de Paris, Drs. Cottenot and Sergent reported observations on eleven patients with hypertension who were treated by Roentgen rays on the adrenals, all other treatments being suspended meanwhile. In ten of these cases there was a lowering of pressure following the irradiations. Seven were cases of pure hypertension with no renal lesions or vascular sclerosis. In these patients the irradiation gave the most remarkable results, lowering the tension 4 or 5 cm. Four others had albuminuria and sclerosis. Three were benefited by the treatment, but less than the first cases. In the fourth there was no results. Thus it seems that adrenal irradiations are indicated for pure hypertension, or when the diminution of the renal permeability is very slight. They constitute a causal treatment of hypertension.

Marriages

Clarence Jackson Laws, M.D., Princeton, Mo,. to Miss Bessie Strang of Kansas City, Mo., at Princeton, February 24.

Hans Christian Jorgenson, M.D., to Miss Alice Elizabeth Coulthurst, both of Salt Lake City, Utah, February 25.

Arthur McCowan, M.D., Vancouver, Wash., to Miss Jean Bagnell of Portland, Ore., at Vancouver, March 7.

Edward S. O'Brien, M.D., to Mrs. Frances L. Hartley, both of Merced, Cal., at Berkeley, Cal., March 10.

Olive Frances Hughes, M.D., and Mr. Emil Kocher, both of Elgin, Ill., February 26.

Deaths

Benjamin Grigsby Copeland, M.D. Jefferson Medical College, 1883; a member of the Medical Association of the State of Alabama; one of the founders of the Birmingham Surgical Society; formerly proprietor of the Copeland Private Infirmary, Birmingham; and surgeon to the Hillman Hospital; professor of surgical anatomy and clinical surgery in Birmingham Medical College; local surgeon to the Alabama Southern, Birmingham Southern, and Southern Railway systems; died at his home in Birmingham, March 11, from tetanus, aged 53.

Moreau Roberts Brown, M.D. University of Louisville, Ky., 1876; of Chicago; emeritus professor of laryngology and rhinology in the Chicago Policlinic; formerly professor of laryngology, rhinology and otology in the College of Physicians and Surgeons, Chicago; a member of the Illinois State Medical Society; a Fellow of the American Laryngological Association; Medical Director of the National Union; a prominent specialist on diseases of the throat, nose and ear; died at his home in Winnetka, Ill., March 20, aged 60.

John Laing, M.D. College of Physicians and Surgeons, New York City; 1884; a member of the Medical Society of New Jersey; president of the New Jersey State Sanitary Association; consulting surgeon to the Paterson Hospital; examiner in hygiene to Rutgers College; for many years president of the Paterson Board of Health; and sanitary advisor of the East Jersey Water Company; an authority on water supply; died in St. Joseph's Hospital, Paterson, March 13, from diabetes, aged 55.

Henry A. Grim, M.D. University of Pennsylvania, Philadelphia, 1855; a member of the American Academy of Medicine; formerly surgeon of the Fifth, Thirty-fourth, Twelfth, and Forty-first Pennsylvania Volunteer Infantry; and later chief surgeon of the First Division of the Army of the Potomac during the Civil War; died at his home in Allentown, Pa., March 8, from cerebral hemorrhage, aged 82.

Marcus Morton Johnson, M.D. New York University, New York City, 1877; a fellow of the New York Academy of Medicine; formerly proprietor of the Woodland Sanitarium; surgeon to St. Joseph's Hospital, Hartford; from 1879 to 1900, surgeon to the Governor's Foot Guard; president of the Hartford Medical Society in 1911; founder and first president of the Hartford Free Dispensary; died in St. Francis' Hospital, Hartford, March 15, aged 69.

William C. Willeford, M.D. Medical College of Indiana, Indianapolis, 1881; of Marion, Ill.; formerly president of the Daviess County (Ind.) Medical Society; local surgeon for the Chicago and Eastern Illinois Railway; died at the home of his son in Indianapolis, January 2, from cerebral hemorrhage, aged 64.

William Whatley Battey, M.D. Medical College of Georgia; Augusta, 1873; a member of the Medical Association of Georgia; formerly lecturer on diseases of women and children in, and president of the Alumni Association of his Alma Mater; died at his home in Augusta, March 12.

Cyrus G. Fletcher, M.D. Pulte Medical College, Cincinnati, 1881; formerly of Erie, Kan.; but for twenty years a practitioner of North Yakima, Wash.; died in Erie, Kan., March 5, from the effects of hydrocyanic acid, believed to have been self-administered with suicidal intent, aged 63.

James F. Gardner, M.D. Western Reserve University, Cleveland, Ohio, 1864; assistant surgeon of the Tenth Ohio Volunteer Cavalry during the Civil War; and later district pension examiner; died at his home in West Brookfield, Ohio, March 9, from arteriosclerosis, aged 77.

James Black Merritt, M.D. University of Vermont, Burlington, 1879; for four years physician to the Talbot County Almshouse; of Easton, Md.; died in the Church Home and Infirmary, Baltimore, March 8, from carcinoma of the stomach, aged 55.

Henry Head Gray, M.D. Trinity Medical College, Toronto, 1890; of Oklahoma City; was found dead in his room in the Blossom House, Kansas City, March 10, from the effects of poison, self-administered, it is believed, with suicidal intent, aged 46.

Edward Clyde Day, M.D. University of the South, Sewanee, Tenn., 1900; of Platte, S. Dak.; aged 38; died in a sanitarium in Chamberlain, S. Dak., March 7, nine days after an accidental gunshot wound of the abdomen.

William Ferguson Matson, M.D. Western Reserve University, Cleveland, Ohio, 1877; for ten years local surgeon to the Allegheny Valley Railroad at Punxsutawney, Pa.; died at his home in East End, Pittsburgh, March 8, aged 58.

Abner Arnold McKinnon, M.D. Trinity Medical College, Toronto, 1899; died in his office in Port Huron, Mich., March 10, from the effects of carbolic acid, believed to have been accidentally self-administered, aged 42.

Thomas William McManus, M.D. College of Physicians and Surgeons, New York City, 1896; a member of the staff of Roosevelt Hospital, New York City; died at his home, March 12, from pneumonia, aged 45.

William Bedford Brown, M.D. Jefferson Medical College, 1889; professor of dermatology in the New York Post-Graduate Medical School; died in the Polyclinic Hospital, New York City, March 9, aged 50.

Thomas Dyer Henderson, M.D. University of Pennsylvania, Philadelphia, 1901; a member of the staff of the Presbyterian Hospital; died at his home in Philadelphia, March 11, from pneumonia, aged about 34.

James Albert Anderson, M.D. University of Virginia, Charlottesville, 1879; a member of the Medical Society of Virginia; of Lynchburg; died in a drugstore in that city, March 13, from acute gastritis.

Colin Walker, M.D. Detroit College of Medicine, 1895; a Fellow of the American Medical Association; Health Officer of Fork Township; died at his home in Barryton, Mich., January 9, aged 54.

Robert Ford Hipsley, M.D. West Pennsylvania Medical College, Pittsburgh, 1907; a Fellow of the American Medical Association; died at his home in Westview, Pa., about March 14, aged 39.

J. H. Deshons (license, W. Va., years of practice, 1881); for many years a practitioner of Greenbriar County; a Confederate veteran; died near Farmdale, W. Va., March 8, aged 89.

Henry S. Hinman, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; a practitioner of Jasper County, Ill., for thirty-six years; formerly president and secretary of the Jasper County Medical Society, and police magistrate of the city of Newton; died at his home March 19, from valvular heart disease, aged 66.

Conrad R. Bready, M.D. Jefferson Medical College, 1880; a member of the Medical Society of the State of Pennsylvania; for many years secretary of the J. Aitken Meigs Medical Association; died at his home in Philadelphia, March 10, aged 54.

James Spence, M.D. University of Toronto, Ont., 1884; died at his home in Thessalon, Ont., January 20, from the effects of carbolic acid, accidentally self-administered, aged 59.

Knud Christopherson Storlie, M.D. Bennett Medical College, 1896; a member of the Wisconsin State Medical Society; died at his home in Coon Valley, Dec. 29, 1913, aged 45.

Olin McCormick, M.D. College of Physicians and Surgeons, Chicago, 1900; of Herscher, Ill.; died in the Presbyterian Hospital, Chicago, March 20, aged 45.

Charles H. Dwyer, M.D. Jefferson Medical College, 1883; a veteran of the Civil War; died at his home in Frankford, Philadelphia, March 13, aged 68.

John William Winn, M.D. Medical College of Ohio, Cincinnati, 1870; of Oklahoma City, Okla.; died in a hospital in that place, March 1, aged 65.

Delarie Allen Bainter, M.D. Birmingham, Ala. Medical College, 1905; of Bessemer, Ala.; died in Lakeland, Fla., March 6, from tuberculosis, aged 44.

Scott Russell (license, years of practice, Iowa, 1886); a practitioner of Mechanicsville for thirty-five years; died at his home, March 4, aged 72.

Alva C. Norris, M.D. Physio-Medical Institute, Cincinnati, 1873; died at his home in New Richmond, Ohio, March 3, from heart disease, aged 65.

Van Buren Potts, M.D. University of Alabama, Mobile, 1905; of Mapleville, Ala.; died in an infirmary in Selma, March 7, from pneumonia, aged 37.

Jessie Fremont Shane, M.D. Cleveland College of Physicians and Surgeons, 1897; died at her home in Steubenville, Ohio, about March 14, aged 54.

George Louis Belisle, M.D. Laval University, Quebec, 1907; was found dead in bed in his home in West Rutland, Vt., January 16, aged 29.

William Smith (license, Indiana, 1897); one of the oldest practitioners of Delaware County; died at his home in Muncie, January 11, aged 70.

Archibald L. Morford, M.D. Medical College of Ohio, Cincinnati, 1891; died at his home in Ewing, Ky., March 4, from pneumonia, aged 44.

Albion Edwin Cobb, M.D. Dartmouth Medical School, Hanover, N. H., 1879; died at his home in Westbrook, Me., February 25, aged 57.

Hermanegilde Jeannotte, M.D. Vivtoria University, Cobourg, Ont., 1874; died at his home in Montreal, February 27, from nephritis, aged 65.

Emily H. Sawyer (license, Mass., years of practice); a practitioner of West Somerville, Mass., for thirty years; died at her home, March 4.

F. A. Whitefield, M.D. Pulte Medical College, Cincinnati, 1890; died at his home in New Providence, Tenn., February 28, from tuberculosis.

William H. Chew, M.D. Curtis Physio-Medical Institute, Marion, Ind., 1893; died at his home in Salamonia, January 6, aged 55.

Andrew B. Grider, M.D. Chicago Medical College, 1892; died at his home in Milwaukee about March 7, from pneumonia, aged 57.

O. W. Farrar, M.D. Missouri Medical College, St. Louis, 1891; died at his home in Stilwell, Okla., February 27, from dropsy, aged 44.

S. W. Moore, a pioneer practitioner of Texas; died at his home in Van Alstyne, Dec. 24, 1913, from senile debility, aged 83.

Hiram E. Turner, M.D. Long Island College Hospital, Brooklyn, 1874; died at his home in Brooklyn, March 8, aged 60.

Hubert Nichols, M.D. Bellevue Hospital Medical College, 1891; died at his home in Brooklyn, March 9, aged 49.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

AMORPHOUS PHOSPHORUS

Dr. Nascher's Reply to The Journal's Article—Comments

To the Editor:—Regarding the article on Amorphous Phosphorus in the March 7 issue of THE JOURNAL of the American Medical Association, I want first of all to clear myself of the implied charge of commercialism in connection with the marketing of the Pill Phosphorus Amorphous by Sharpe & Dohme. I have never had anything to do with the manufacture or sale of those pills, never had any business dealings with Sharpe & Dohme and I have no commercial interest whatsoever in either this or any other drug or drug house. I knew nothing about the advertisement which you reproduced until I saw it in the medical journals. I immediately protested against this unwarranted use of my name and was assured that the statement "Made under the direction of Doctor I. L. Nascher, New York," was not made for the purpose of misleading and that the ad. would be immediately withdrawn. I gave my approval to the pills made by this firm as I would give my approval to the pills made by any other reliable house for I claim the right to endorse any drug or preparation which I believe to be of value whether it is approved by the Council of [on] Pharmacy and Chemistry or not.

In your general charge of commercialism you make it appear that the exploitation of amorphous phosphorus had the ulterior purpose of appealing to the sexual neurasthenic along the lines of the "lost manhood" ads. So far as this relates to Sharpe & Dohme, I have no interest, but you have included me in your general denunciation. The only reference I ever made to aphrodisiac effects of Amorphous Phosphorus, in all my writings, is contained in these words in the four-page article in the *American Practitioner*, "In a few cases aphrodisiac effects were noticed." I have never recommended amorphous phosphorus as an aphrodisiac and in the chapters on "Impotence and Neurasthenia" in my book on "Diseases of Old Age," I have not mentioned amorphous phosphorus at all.

You say "the treatment seems first to have been brought to notice through a printed slip sent to medical journals generally." This slip containing an extract from my book which was then in press was sent out about four months ago while I have referred to amorphous phosphorus repeatedly in medical articles during the past three years. In my paper on Senile Debility, *Medical Record*, Jan. 21, 1911, I said amorphous phosphorus had no effect, as I was then looking for the usual effects of the ordinary phosphorus. In a paper on Senile Mentality, *International Clinics*, Vol. 4, 21st series, I said I was using amorphous phosphorus but had not yet determined its value. I recommended it in several of my papers, articles and lectures in 1912 and 1913 after I had found that under its use in some cases of senile arteriosclerosis, symptoms were relieved. I sent these slips to the medical journals as a general reply to many inquiries I received about amorphous phosphorus and I stated this in the letters I sent with the slips to some editors. Further inquiries for more information led me to write the paper which appeared in the December issue of that "obscure journal" the *American Practitioner*. I felt that a medical journal which carried articles by Sir James Barr, ex-president of the British Medical Association, Sir R. W. Philip, R. Murray Leslie, Halliday Sutherland, and such American authorities as Adami, Hare, Brooks, Hirschberg, Knopf, Starkey, Ely, Bissell, Wilcox, Col. Maus, U. S. A., etc., was a representative high class journal and I was pleased to have my paper appear in it.

To take up the scientific criticism of amorphous phosphorus, permit me to say at the outset that I am a general practitioner, specially interested in geriatrics, and more concerned about obtaining favorable clinical results in my cases than in solving laboratory problems. Nevertheless I have tried for years to obtain the cooperation of expert laboratory workers to help me determine the properties, chemical, physical and physiological, of amorphous phosphorus. In 1909 or 1910 the Rockefeller Institute, in reply to my request for permission to experiment there with amorphous phosphorus, said it did not accept volunteer workers. Four heads of college laboratories could not spare the time. I asked the Council on Pharmacy and Chemistry last November to take up its investigation and was informed that it could not do so at present. I have been perforce compelled to depend mainly on empirical methods with such little experimentation as the facilities of the physician's office permitted and such little literature as I could find.

You reject empirical methods as being unscientific notwithstanding the fact that most of our therapeutic knowledge is based on empiricism. (I use the terms empirical and empiricism here in the sense of knowledge obtained from experience and observation, not in the bad sense in which they might be construed.) It would therefore be folly on my part to argue with you that I have obtained beneficial results from amorphous phosphorus in many cases of senile arteriosclerosis. I did not obtain such results from a single dose, but gave it in some cases for many weeks or months. It is unfair to judge of the value of a drug from a single dose or several doses unless it is a drug which is expected to show immediate effects. It would be greater folly on my part to pit my knowledge of pharmacy and chemistry against the knowledge of your staff of experts. I can but repeat what I have said on many occasions that under the persistent use of amorphous phosphorus in cases of senile arteriosclerosis symptoms were frequently relieved. I never claimed that amorphous phosphorus will cure arteriosclerosis. In the chapter on Arteriosclerosis in my book I say: "Senile arteriosclerosis being a natural, normal condition, is incurable in the sense that it can be neither prevented nor removed. The best that we can hope for is to retard its progress and relieve disagreeable symptoms, etc."

You say in reference to the elimination of the amorphous phosphorus as amorphous phosphate of calcium, "Is it not a fact that he (I) found the urine alkaline and detected a precipitate of amorphous calcium phosphate—always present in alkaline urine — and concluded that this must be his particular amorphous phosphorus in combination with calcium?" No. The specimens of urine were examined in reliable laboratories and I have reports showing acid and neutral urine as well as alkaline urine having the amorphous phosphate precipitate. Nor is the amorphous phosphate "always present in alkaline urine."

As for the theory I advanced, it is simply a theory based on reasoning without facts to prove it. If I had facts to prove it, it would no longer be a theory or open for discussion. Being a theory, it is the province of the wise man to ridicule it and call it absurd. I will confess that your criticism of it is not clear to me and I still do not see its absurdity. I don't see what relation your argument, that the phosphates of sodium and potassium do not draw the calcium from the blood, brains and bones, has to the theory I advanced. It is true that I have no private mark by which I can identify the amorphous phosphate produced by amorphous phosphorus, but such argument is puerile. When medical science has so far progressed that the physician will be able to put his tag on the molecule of drug substance and follow it through the various metabolic processes to its final elimination we will not need any Council on Pharmacy and Chemistry to decry what it cannot understand. Let me say here that scientific criticism does not stoop to ridicule for ridicule is usually based on animus or bias.

The conclusive proof of the value of a drug is not its action on the healthy dog, frog or guinea-pig but its action on the individual patient, and no amount of animal experimentation can dispose of the personal factor which is so marked in senile cases. This is no criticism of animal experimentation as a whole but of the insistence on animal experimentation to determine the value of a drug in a class of cases for which the healthy animal can furnish no comparison.

You say amorphous phosphorus is practically inert and quote Noé, Witthaus and Becker, Thornton and Phillips. The quotations of the first three are little more than statements that amorphous phosphorus is non-toxic. Phillips makes two references, one of which is to Badner who obtained decided effects from its prolonged use. Thornton, whom you quote in your contention that amorphous phosphorus is inert, says that on prolonged use in doses of 3/10 grains every two hours it produced headache, vertigo, mental excitement, priapism, etc. (See footnote under Phosphorus, U. S. Dispensatory). Shoemaker's Materia Medica and Therapeutics says it is toxic and is called the servant-girl's poison. Phillips suggested that Badner probably used an impure drug. I suggested that Thornton probably used an impure drug. On the other hand, Badner and Thornton obtained positive results from prolonged use, not from the single dose.

You say it has not been used on account of its insolubility in any of the liquids of the body. Roscoe and Schorlemmer, quoting Neuman, said if injected into the blood the usual symptoms of phosphorus poisoning appear. In a letter from Dr. Hatcher he says Nassé injected 0.2 gm. of the purest amorphous phosphorus into a rabbit's vein and the animal presented the usual symptoms of phosphorus poisoning. There are also references to amorphous phosphorus action in Kobert's *Lehrbuch der Intoxicationen*, in Blythe's Poisons, etc.

You say of your four quotations, "the foregoing represents our scientific knowledge as to the action of amorphous phosphorus." Did you not know of these other authorities, or are their statements unscientific, or were they omitted because they disprove your contention that amorphous phosphorus is practically inert.

Your denunciation of ordinary phosphorus has no bearing on the subject as I do not recommend the amorphous phosphorus as a substitute for the other.

I have worked for eight years to arouse medical and public interest in the aged and their ailments and I cannot afford charges of commercialism, foisting worthless drugs as aphrodisiacs or other unethical conduct to stand against me. As for the charge of unscientific work, I can only point to my work on Diseases of Old Age, and my medical papers, and express the hope that others better equipped for laboratory research will take up the laboratory investigation of amorphous phosphorus. I have faith in its therapeutic value and believe competent clinical observers will have favorable results from it in suitable cases.

I. L. Nascher, M.D., New York.

Comment: Accompanying the preceding letter was a note from Dr. Nascher in which he says: "I want this published in full without elision or change. If you do not intend to publish it as written, I want it returned and enclose postage." The letter therefore is given in full in spite of the fact that much of it is irrelevant to the question discussed.

Dr. Nascher's protest to Sharpe and Dohme against the "unwarranted use" of his name in connection with "Pill Phosphorus Amorphous, S & D" seems to have resulted in various modifications of the phrases connecting his name with the exploitation of this pill. What was apparently the original advertisement, contained the phrase:

"Made under the direction of Dr. I. L. Nascher, New York."

Later advertisements, while identical in all other respects with the first, had this phrase modified to read:

"Made at the suggestion of Dr. I. L. Nascher, New York."

Still other advertisements, also identical with the first in other respects, are modified to read:

"Made with the approval of Dr. I. L. Nascher, New York."

That Dr. Nascher was directly or indirectly connected with the commercializing of this product, The Journal has never suggested, inferentially or otherwise. That the exploitation of amorphous phosphorus by Sharpe and Dohme is one that appeals to the sexual neurasthenic, no one who has read the advertisements can deny. As a matter of fact, it would be difficult to sell phosphorus in any form as a medicament, without appealing to the sexual neurasthenic. The word "phosphorus" has become, in the minds of both laymen and physicians, more or less synonymous with the treatment of so-called sexual weakness and it is a practical impossibility to divorce the word from the idea suggested. How true this is, Dr. Nascher himself unwittingly admits when he tells that the result of his first experiment on himself with amorphous phosphorus was a priapism that he acknowledges was "probably psychic, as I was looking for such a result." But the Sharpe and Dohme advertisements plainly state that the amorphous phosphorus pill they are marketing is a "new and successful method of treatment for . . . functional and senile impotence . . ."

Dr. Nascher's explanation of how he came to send out the slip regarding amorphous phosphorus to medical journals leaves him the victim of an unfortunate coincidence. It is at least unusual for authors to send out advance extracts from books that are about to be published, especially when such extracts deal wholly with a drug that is coincidently being introduced as a new proprietary product by some enterprising pharmaceutical house.

Dr. Nascher takes exception to our statement that the treatment seems first to have been brought to notice through the printed slip sent to medical journals, and states that he has "referred to amorphous phosphorus repeatedly in medical articles appearing during the last three years." His articles for 1912 and 1913 have been examined for the purpose of learning when the treatment as now presented to the profession was first announced. In his article "Errors in the Treatment of Senile Cases," *New York Medical Journal*, Oct. 12, 1912, he speaks of the iodids in senile arteriosclerosis, but says nothing about amorphous phosphorus. It may be assumed, therefore, that the treatment had not been brought to general notice at that time. The new treatment is very briefly described in the *New York Medical Journal*, July 13, 1913, in an article whose title, "Longevity and Rejuvenescence" gave no indication that it dealt with amorphous phosphorus. Under the circumstances, it is not strange that its therapeutic value was not learned of until Dr. Nascher's printed slips were sent out.

Dr. Nascher admits that his theory is based on empirical methods. Most of the serious errors in therapeutics have had their origin in this very method. It was on just such methods that physicians reported wonderful results in the use of alleged "lithia waters" that actually contained less lithium than ordinary river water! So unscientific is the empirical method that it is hardly worth taking the space to demonstrate its imperfections.

Neither is it worth while to discuss the question of a constant occurrence of a sediment of amorphous calcium phosphate in alkaline urine. If there are exceptions to this rule, they must be rare indeed.

In THE JOURNAL'S article authors were quoted to show that amorphous phosphorus is regarded as inert. It was not suggested that the authorities referred to were all that could be found. Dr. Nascher refers to Thornton, Shoemaker, Neumann, Blythe and Kobert, and asks whether the various statements on the subject, made by these men, are unscientific or were "omitted because they disproved" the contention that amorphous phosphorus is practically inert. Thornton's article was omitted because it is unscientific in that he does not report experiments made by himself, but refers to an unpublished paper by one Kelly. Who Kelly is, or was, he does not tell us. Kelly's report, therefore, should be and was disregarded, since it is the work of an unknown author and there is nothing in the article to indicate that Thornton was in any position to vouch for Kelly's work. Incidentally, it may be said that Kelly's report merely recorded subjective symptoms; Dr. Nascher himself indicates his distrust of Kelly's alleged results by suggesting that an impure preparation was used!

Shoemaker's report was not given, for a similar reason. Shoemaker says:

> "Amorphous phosphorous is almost completely destitute of taste or odor, has no immediate caustic effect, and is claimed to be less toxic than white phosphorous; but in the *form of matches* [Italics ours.—ED.] has caused many deaths and is known as the "servant girls' poison'."

It is well known that commercial amorphous phosphorus is usually impure, and it is more than probable that if toxic effects were produced by the ingestion of match-heads, these matches were made either of white phosphorus or of very impure red phosphorus. In any case, Shoemaker's statement has no bearing whatever on the pharmacologic action of pure amorphous phosphorus.

The statement of Neumann quoted from Roscoe and Schorlemmer, as well as that of Nassé, referred to by Hatcher, had no bearing on the question at issue, as these men injected the material into the blood-stream. If, when the amorphous phosphorus is injected into the blood, it produces the ordinary symptoms of phosphorus poisoning, one would naturally expect the same symptoms when the substance is given by mouth—if amorphous phosphorus were soluble or absorbable. The fact that such symptoms are not produced when amorphous phosphorus is taken into the alimentary canal, sustains the views held by chemists, pharmacologists and physicians, that the drug is practically insoluble and unabsorbable—in other words, inert.

Dr. Nascher declares that he "never claimed that amorphous phosphorus will cure arteriosclerosis." Yet he insists that amorphous phosphorus removes lime from the "abnormal lime deposits" that occur in arteriosclerosis. What is this but claiming curative action?

Summed up, Dr. Nascher's own admissions amply confirm the main contentions of THE JOURNAL'S article. He admits that he has no experimental basis for the use of this remedy; he admits that his theory "is simply a theory without facts to prove it." The only conclusions that can be reached from his reply coincide closely with the very statement made by THE JOURNAL, and which we here reiterate:

"It seems evident, therefore, that his claims for the value of this remedy rest on no better foundation than an unproved theory without experimental basis."

SANATOGEN TESTIMONIALS—A CAUSE FOR OPTIMISM

"The Opinions of Members of the American Medical Association regarding Sanatogen" is the title of a sixteen-page booklet now being inflicted on the medical profession. As in all such cases, THE JOURNAL was immediately made aware of this advertising campaign by physicians sending in, by the score, the latest "literature." Many who have forwarded the Sanatogen booklet deplored the fact that members of the American Medical Association should have given the testimonials printed, and feel that there is reason for pessimism in the spectacle presented. Far from it! This booklet is one of the most encouraging things that have come to THE JOURNAL office in a long time. Ten years ago the enormously expensive Sanatogen advertising campaign would have resulted in hundreds of physicians giving testimonials for the product, and scores writing puffs for the stuff in the form of "original articles," in venal medical journals. To-day, thanks to THE JOURNAL'S campaign on the proprietary evil, the exploiters of Sanatogen are able to submit forty-three testimonials from members of the American Medical Association. And of those not one of the forty-three is apparently willing to have his name appear in connection with his endorsement! Forty-three men out of a total membership of about 70,000! Forty-three members of the American Medical Association out of an alleged "19,000 original letters from members of the medical profession in America, England, Germany and other countries." Assuredly, here are grounds for optimism. It may be noted, incidentally, that out of the 43 testimonials alleged to have been given by members of the American Medical Association, 15 are from New York, 6 from Pennsylvania, 5 each from Massachusetts and Illinois, 3 from Maryland, and one each from Alabama, Maine, Michigan, Missouri, New Jersey, Ohio, Rhode Island, Utah and Wisconsin.

Brahman Medicine.—The center of medical science lay in the holy city of Benares on the Ganges — also the seat of Brahmanic learning. The following view was current on the necessary traits of a scholar suited for the study of medicine and those of a fit teacher: "The scholar must have a quick tongue, small lips, regular teeth, a noble aspect, well-formed nose and ears, a lively spirit and a graceful bearing; he must be capable of withstanding pain and fatigue." "The teacher must read aloud from the holy book, step by step, verse by verse, distinctly, but without effort, without hesitation, neither too quickly nor too slowly, not speaking through the nose, showing no trace of impatience," etc. At the close of the initiation ceremony the novice was warned to be chaste and abstemious, to wear a beard, to speak the truth, to eat no meat, to render to his teacher obedience in all things; as a physician he was to treat gratuitously Brahmans, teachers, the poor, friends and neighbors, the pious, orphans, etc.—Neuburger: History of Medicine.

Correspondence

Psychanalysis

To the Editor:—The conclusions reached by Dr. Dercum in his article, "An Evaluation of the Psychogenic Factors in the Etiology of Mental Disease, Including a Review of Psychanalysis" (THE JOURNAL, March 7, 1914, p. 751), are so widely at variance with my personal experience and so vehemently opposed to the views of men whose opinions are authoritative in psychiatric matters, that I think the article should not pass unchallenged.

In his opening paragraph Dr. Dercum seems to see confusion resulting from disregard of what he terms "established clinical distinctions" in psychiatry. As a matter of fact, the older clinical distinctions have been inadequate; they disregarded the finer mechanisms lying back of symptoms. The more recent developments in psychologic knowledge enable us, chiefly by means of psychanalysis, to get at these pathologic mechanisms, an understanding of which is essential in order to make necessary differential distinctions. It is on such distinctions that the entire situation often depends—diagnosis, therapy and prognosis. The folly of attempting to deal with psychiatric cases without a searching probing for the hidden mechanisms which may lie at the bottom of the trouble is well illustrated by a few brief points in the history of a recent patient: The man, who came to me within the past year, had been dominated for fifteen years by fears of leaping from moving trains or high windows. His business was seriously interfered with; he would drive or walk hundreds of miles to avoid taking a train. He had been labeled a neurasthenic, a psychasthenic, a victim of imagination or a fool in accordance with the lack of insight of the man he happened to be consulting. The patient was at the point of desperation; he could no longer make a living. A few talks with him brought to light the fact that the obsessions dated from a time when, weak from a severe siege of typhoid, he had been wrongly told by his physician, because of a sore throat, that he had syphilis, in spite of the patient's earnest denials of the possibility of such infection. Since he was a man of unusual delicacy and breeding, the thought of having such a disease was intolerable. It unfortunately happened that immediately following the announcement of syphilis—the patient weakened from typhoid and in terror over his supposed infection—his attention was called to two suicides, the one by leaping from a window, the other by leaping from a train. His mind, unable to endure the loathsome thought of syphilis, transferred its anxiety to a more respectable obsession: the fear of death by one of these means. This has absolutely dominated his life ever since. The dread of syphilis was immediately and entirely forgotten; it was with some difficulty that he could recall the matter at all. When shown just what lay back of his phobia, the man, able to recognize the significance of the etiologic factors, began at once to improve. He is now in a fair way to recovery. The existence of syphilis was positively excluded. Fifteen years of regard for "established clinical distinctions" had been of no avail in this case! A letter is too brief in which to cite the many cases I have personally known in which the patient has been helped by being led to a comprehension of the reasons for his malady, or the circumstances which have gone to building it up. A knowledge of these circumstances and of the causes lying deep in the patient's unconscious are to be reached, in suitable cases, only by means of psychanalysis.

Dr. Dercum seems to throw all functional nervous and mental disorders back on an underlying neuropathy, and to be satisfied without differentiating further in diagnosis. "Neuropathy" is a purely relative, an extremely vague and elastic term; etymologically, it means any nervous disease. Dr. Dercum seems to read etiology into neuropathy with as much facility as he erroneously accuses the psychanalysts of finding what they are looking for in "hysteria"—the term hysteria is his explanation of their findings. Granting this underlying neuropathy (which I cannot do in every case), what is to be done with these patients? In refusing to accept psychanalysis we turn our backs on a valuable aid for their treatment. A diagnosis of underlying neuropathy does not indicate treatment beyond general physical measures. It fails to recognize the special personal therapy indicated in every functional neurosis, which should take into account all the factors in the individual's environment with a view to eradicating harmful mental reactions.

Dr. Dercum seems to deny that a normal person can show pathologic results from emotional causes. On this assumption are we to infer that every normal person has an infinite capacity for withstanding all varieties of emotional stress, regardless of intensity or length of duration? Recently there came into my service a young woman, aged 17, suffering from a psychosis which seemed to result from the fact that two years previously she had been compelled to cohabit with her drunken father. I do not believe an underlying neuropathy is necessary for the development of a psychosis under such circumstances. Every one is familiar with psychoses arising from continued emotional stress, such as long terms of unjust imprisonment or the years of terror lived through often by wives of drunken husbands. Normally, there is a tremendous physiologic reaction to intense emotion like fear, anger, etc., revealed, for instance, in the rapid heart, secretory and circulatory changes, and mental reactions. It requires no great stretch of the imagination to see how such emotional states, if prolonged, may bring about pathologic results.

The best refutation of Dr. Dercum's discussion of the Freudian theory is a careful reading of the Freudian writers themselves. Dr. Dercum certainly misunderstands the meaning of sexual manifestations in the Freudian sense. In this sense it covers a broad and comprehensive field of experience and activity, whether bodily desires or mental longings. It embraces all desires, instincts, wishes, ambitions—like hunger, sex, acquisition, aspiration, the social sense, love of art, etc. This is a far cry from the narrow vulgar conception of the term which seems to be understood by the men opposing the Freudian psychology.

Finally, does it not seem a bit presumptuous to condemn psychanalysis wholesale, when it is being seriously followed by psychiatrists everywhere? If we shut out from acknowledgment Freud himself, there are still to be reckoned with such earnest students of the "cult" as Bleuler, Jung, White, Burrow and Meyer, along with other noted names. In the face of the enthusiastic acceptance of psychanalysis by such sternly scientific men as Bleuler and Jung, Dr. Dercum still sees it as only a "faith"; as resting on no "scientific proof" whatever.

Dr. Dercum states that neither Freud nor his followers have given Janet's contributions to the suject of hysteria "recognition or attention." Jung, in his monumental monograph, "The Psychology of Dementia Praecox" (Monograph 3, Journal of Nervous and Mental Disease Publishing Company, New York, 1909), gives serious recognition, particularly in the chapter on dementia praecox and hysteria, to Janet's important contributions to the subject of hysteria.

C. C. WHOLEY, M.D., Pittsburgh, Pa.

The Histopathologic Loan Collection and Relieving the Curriculum

To the Editor:—In THE JOURNAL, Jan. 24, 1913, p. 314, there appeared a letter from Dr. R. A. Lambert commenting on our article bearing this title which appeared in THE JOURNAL, January 10.

In teaching chronic nephritis we find it desirable to present to the students as nearly pure types as possible. For example, pure types of chronic intracapillary glomerulonephritis and chronic capsular glomerulonephritis. With about two hundred necropsies a year we find that we do not often meet such pure types. When we do meet one we recognize the occasion as an opportunity to add it to the loan collection in case the collection is not already provided with suitable material of this character. The histology of chronic nephritis as encountered in man, will undoubtedly be the same as it is now for many years in the future.

After the course is completed we feel that it is desirable that the student should be engaged largely in the active, more detailed study of specific problems rather than on such a large territory as a set of sections that have been given to him during the course in pathology involves. In any case loan collections are at his disposal during the third and fourth years if he cares to use them.

We are not convinced that the students are in a position to judge of the matter. The chief problem of the teacher is to give to the student as much practical experience as possible during the period of his course, that is, to apply as extensively as possible the "learn by doing" (President MacLaurin) method of teaching during the student's formative years, and to provide time for it.

In our opinion the first fifteen or twenty minutes of a laboratory meeting constitute the most valuable period of the meeting, and if this fifteen or twenty minutes is spent in the rather taxing routine of mounting sections the success of the work of the laboratory period is seriously affected. Furthermore, seventeen and one-half minutes taken from each laboratory period of the course constitutes a total of nineteen hours. This goes far toward providing scheduled time for a course in experimental pathology. The scheduled time given to the longest established course in experimental pathology in this country is thirty hours.

H. S. STEENSLAND, M.D.,
H. G. WEISKOTTEN, M.D.,
Syracuse, N. Y.

New Method for Therapeutic Use of Typhoid Vaccine

To the Editor:—Recently in THE JOURNAL (March 7, 1914, p. 800) there appeared an abstract of a preliminary report on this subject by Dr. I. S. Kahn of San Antonio, Tex. Dr. Kahn brings forward the theory that typhoid patients or those who have recovered from typhoid react to small doses of typhoid vaccine in a manner similar to that in which patients suffering from tuberculosis react to tuberculin. This theory is wrong. Typhoid patients do not give a reaction to minute amounts of typhoid vaccine, as their serum contains an antibody brought into play by their attack of fever. The body reacts against the introduction of a foreign protein (typhoid bacilli).

In 1911, I published a skin-reaction test based on this theory of antibody in the system of those suffering from typhoid fever (*Med. Rec.*, New York, Dec. 31, 1911). The typhoid patient gives no reaction to the test because of his antibody. The person free from typhoid gives a slight skin reaction, because of his lack of antibody to fix the vaccine.

F. A. PRENDERGAST, M.D., Brooklyn.

Lactic-Acid Bacillus Spray and Sour Milk in Diphtheria

To the Editor:—The suggestion of Dr. Harold B. Wood, in his article, the "Lactic-Acid Bacillus Spray for Diphtheria" (THE JOURNAL, Aug. 9, 1913, p. 392), to swab the throat with sour milk when other means were not at hand, induced me to make a trial of this method. I employed it in two cases, and on Jan. 3, 1914, we began the use of lactic-acid bacillus spray. The results so far have been exceedingly gratifying, but it will be at least six months before we shall be ready to publish our findings. I desire, however, to say most emphatically that in no case of diphtheria should this method supersede the use of antitoxin. I am offering this preliminary note because our work here at Ann Arbor slightly antedates that of Drs. S. T. Nicholson, Jr., and John F. Hogan, whose paper appears in THE JOURNAL, Feb. 14, 1914. Since August, 1913, over one hundred cases of diphtheria and of diphtheria carriers have come to my notice. Our results from the point of view of prophylaxis and of shortening the period of quarantine have been uniformly good.

JOHN A. WESSINGER, M.D., Ann Arbor, Mich.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MILK POWDER AND CONDENSED MILK AS INFANT FOOD IN TROPICS

To the Editor:—In our tropical country, where the milk is not sufficient to supply the demand, condensed milk is extensively employed as a food for infants and children. I have read several articles and lately a book called "Le lait desséché," by M. C. Prof. Ch. Porcher de Lyon, in which powdered or dry milk is asserted to be superior to the condensed milk.

Do you think that it is better suited than condensed milk for infants' or children's food?

Do you think that the dry milk is more suitable and less apt to decompose in warm climates?

Would you advise the powdered milk for general use as a children's food?

Please indicate the name and address of some firms which manufacture the article properly.

LUIS P. JIMENEZ, M.D., San José, Costa Rica.

ANSWER.—We are unable to find anything touching on Porcher's "Le lait desséché." The libraries here have no such book, and we are inclined to think that the preparation is a proprietary food the same as others which will be mentioned later.

As to whether or not condensed milk is food best suited for infants in tropical climates there is some doubt. Condensed milk is usually divided into two groups: first, the evaporated milk, to which no sugar is added and, second, condensed milk which is condensed with cane-sugar to the amount usually of 40 per cent. McCampbell, in the laboratories of the Ohio State University and the University of Chicago, in testing the sediment of condensed milk, has found a large amount of manure, and has been able to demonstrate tubercle bacilli both by culture and by animal experimentation. This would raise some grave doubt as to whether condensed milk, as it is usually prepared, is a good food for infants. To make condensed milk a marketable product, and sell it at the price at which it is often sold, it is necessary that rather poor milk be used. This is indicated by the relatively low percentage of fat in the various contents of the milks. The objections to these condensed milks are two: First, evaporated milk is subject to decomposition, and probably this milk is not shipped to tropical climates. Second, milk to which cane-sugar is added very frequently produces nutritional disturbances in infants, cane-sugar being that form of sugar which is hardest for the infant to dispose of.

Probably a milk powder is more suitable in hot climates and less apt to decompose. Where it is not possible to obtain fresh milk or good milk, powdered milk would probably make a good food for general use in the feeding of infants and children. The powdered forms of infant foods may be divided into several different classes. For the purpose in question, the class to which milk must be added is not to be considered. We have besides this class many forms of powdered infant-foods, most of which are dried milk to which has been added carbohydrates in the form of starch or dextrin or maltose mixtures. Among these may be mentioned:

Eskay's Food, which has an approximate composition of 6 per cent. protein, 1 per cent. fat, 68 per cent. sugar, 21 per cent. starch, and 3.9 per cent. salts. Sugar, as in this instance, is largely maltose. Eskay's Food is to be obtained from Smith, Klein and French Company, Philadelphia.

Horlick's Malted Milk, which contains 16.5 per cent. proteins, 9 per cent. fat, 68 per cent. sugar consisting of maltose, and 3.9 per cent. salts. There is no starch in this food. This may be obtained from the Horlick's Malted Milk Company, Racine, Wis.

Nestlé's Food, which contains 4.6 per cent. fat, 10.8 per cent. protein, 23.6 cane-sugar, 6.7 per cent. milk-sugar, 17.5 malt-sugar, 10.6 per cent. other soluble carbohydrates, and 21.6 per cent. starch. This can be obtained from the Nestlé's Food Company, 92 Chambers Street, New York City.

Other infant foods, such as modified milk powder, which contains 13.2 per cent. fat, 17.7 per cent. proteins, and 58.4 per cent. milk-sugar; and Mammala, which contains 12.1 per cent. fat, 24.3 per cent. proteins and 55.4 per cent. milk-sugar.

Allenbury's Food, which comes in two forms: No. 1 contains 17.3 per cent. fat, 10.8 per cent. proteins, 41.7 per cent. milk-sugar, 13.7 per cent maltose and 10.2 per cent. other carbohydrates. No. 2 contains 16 per cent. fat, 10 per cent. proteins, 36 per cent. milk-sugar, 19 per cent. malt-sugar, and 12.5 per cent. other simple carbohydrates. Allenbury's Malted Food, or No. 3, contains 0.8 per cent. fat, 10.4 per cent. proteins, 13.5 per cent. maltose, 6.7 per cent. other carbohydrates, and 57.7 per cent. starch.

Other powders introduced on the market, such as the albumin milk powder, which is put out by Louis Hoos, 5232 Kenmore Avenue, Chicago.

Perhaps powdered milk preparations in more or less liquid form would be more stable in a warm climate than would the ordinary evaporated foods, since the lactic acid bacillus has already brought about as much of an acid formation as possible and therefore excludes the further action of fermentative bacteria to a large degree. Since putrefaction occurs only in sterilized milk, if these foods are evaporated *in vacuo*, as most of them are, there ought to be comparatively little danger of further decomposition than that which is brought about by the action of the lactic acid bacillus on the milk-sugar. Such a preparation as Biedert's Buttermilk Conserve, or Albuco, a form of albumin milk, which is put up by the National Dairy Products Company, 152 North Paulina Street, Chicago, is an example of the product above described.

Unfortunately for our purpose, no foods are prepared in this manner which have the full approbation of the medical profession; but in a case such as this, it is necessary to do the best we can with the materials obtainable; and while it is altogether likely that the foods here mentioned are in no way proper substitutes for good cow's milk mixtures, still they can be used with the proper precautions as to amount, etc. It should be mentioned, however, that in few cases is it possible to take for granted what the advertiser says of his product, and the quantities which are recommended are very frequently much in excess of the amount required for the individual baby.

ASTHMA AND HAY-FEVER AS CONTRA-INDICATIONS OF DIPHTHERIA ANTITOXIN

To the Editor:—In The Journal, Jan. 31, 1913, p. 378, the following statement is made: "When antitoxin is indicated in diphtheria, or horse-serum in hemorrhage, one should be sure to inquire whether or not the patient is an asthmatic or a sufferer from hay-fever, and especially if horse emanations cause either of these conditions. If such is the case, all horse-serums are positively contra-indicated. Even severe diphtheria must be combated without the aid of antitoxin, as its use may cause the death of such patients."

I should like to ask how generally these rules are concurred in and if there may not be exceptions to them.

George D. Carnes, M.D., South Haven, Mich.

Answer.—As a rule, diphtheria occurs in children too young to have become sensitized against horse-serum or to have experienced an attack of asthma. In such cases there should be no hesitation in giving the antitoxin. In adults or older children who have exhibited such symptoms of asthma or are sensitized to proteins from the horse, the caution given should be scrupulously regarded.

LITERATURE ON ALCOHOLISM

To the Editor:—Please give references to the literature on alcoholism. C. E. Sceluth, M.D., Chicago.

Answer.—The following is a fairly representative bibliography of this subject:

Phelps, E. B.: Supposed Death-Rate of Abstainers and Non-Abstainers and Their Lack of Scientific Value, *Am. Underwriter and Insurance Rev.*, July, 1913.
Is Alcohol a Food? editorial, The Journal, Sept. 20, 1913, p. 966.
The Occurrence of Alcohol in the Tissues, Current Comment, The Journal, Oct. 11, 1913, p. 1383.
Woods, Matthew: Seven Cases of Epilepsy in Children Traced to Single Alcoholic Intoxications on the Part of One or Both Parents Otherwise Teetotalers, The Journal, Dec. 27, 1913, p. 2291.
Wood, H. C.: Habitual Use of Alcohol, *Lippincott's Month. Mag.*, 1913, xci, 175.
World-Wide Fight against Alcohol, *Rev. of Rev.*, 1912, xlv, 374.
Mervin, S.: Fighting the Deadly Habits; the Story of Charles B. Towns, *Am. Mag.*, 1912, lxxiv, 708.
Ferris, A. W.: Alcohol and Insanity, *Survey*, 1910, xxiii, 775.
Emerson, C. P.: Insanity and Disease, *Survey*, 1910, xxv, 41.
Salmon, T. W.: Two Preventable Causes of Insanity, *Pop. Sc. Month.*, 1910, lxxvi, 557.
Liquor Problem and Public Health, *North Carolina State Board of Health Bull.*, December, 1912.
The Taboo on Moderate Drinking, Current Comment, The Journal, Nov. 2, 1912, p. 1631.
The Pathologic Anatomy of Chronic Alcoholism, editorial, The Journal, Nov. 27, 1909, p. 1824.
Alcoholism and the Germinative Cells, editorial, The Journal, Feb. 19, 1910, p. 617.
Alcoholism and Heredity, editorial, The Journal, Feb. 4, 1911, p. 350.
Alcohol and Insanity, Current Comment, The Journal, April 20, 1912, p. 1203.
Alcohol and Racial Degeneration, editorial, The Journal, Dec. 21, 1912, p. 2261.
Billings, J. S.: Physiological Aspects of the Liquor Problem, Boston, Houghton, Mifflin & Co., 1903, two volumes.
Crosby, J. A.: Prescribing Alcohol, *Jour. Minnesota Med. Assn.*, 1907, xxvii, 163.
Hobhouse, F.: Alcohol on the Medical Side, *Med. Mag.*, London, 1907, xvi, 190.
Hunt, Reid: Studies in Experimental Alcoholism, Bull. 33, Hyg. Lab., 1907, Washington, D. C.
Grimm, A. S.: Medical Profession Losing Faith in Alcohol, *West Virginia Med. Jour.*, September, 1908.
Kellogg, J. H.: Latest Verdict of Science on the Alcohol Question, *Lancet-Clinic*, Oct. 3, 1908.
McDonald, J.: Remedial Uses of Alcohol, *Brit. Med. Jour.*, Jan. 30, 1909.
Osborne, O. T.: Therapeutic Use of Alcohol, *Yale Med. Jour.*, 1909-1910, xvi, 258.
Wiggs, L. B.: Some Pharmacological Observations on the Action of Various Potent Remedies, 1, Alcohol, *Old Dominion Jour. Med. and Surg.*, 1909, ix, 252.
Starke, J.: Alcohol, the Sanction of Its Use, Scientifically Established and Popularly Expounded by a Physiologist, New York, G. P. Putnam's Sons.
Sajous, C. E. de M.: Alcohol in Therapeutics, *Month. Cycl. and Med. Bull.*, July, 1910; *Jour. Inebr.*, 1910, xxxii, 149.
Bliem, M. J.: The Growing Disuse of Alcohol in Therapeutics, *Texas State Jour. Med.*, 1911-1912, vii, 6.
The Metropolitan, A number devoted to the effects of alcohol, 1911, xxv, No. 11, The Metropolitan Life Insurance Company, New York.
The Medical Use of Alcoholic Liquors, Testimony of Physicians, Mrs. M. M. Allen, Marcellus, N. Y.
International Congress on Alcoholism, Twelfth Report of Official Delegates Appointed by U. S. Government, 1909, International Reform League, 206 Pennsylvania Avenue, Washington, D. C.
Smith, F. E.: True Lines of Temperance Reform, *Nineteenth Cent.*, 1912, lxxi, 730.

ARTICLES ON MENTAL PATHOLOGY OF PELLAGRA

To the Editor:—Please furnish me with a bibliography on the subject of the mental pathology of pellagra. It occurs to me that this phase of the disease has been neglected to a considerable extent. J. C. Herrington, M.D., Asylum, Miss.

Answer.—The following is a list of recent articles on this subject:

Hoag, D. E.: Pellagra: Observations on Some of Its Nervous Manifestations, The Journal, Oct. 19, 1912, p. 1445.
Preston, J. W.: Mental Stress a Possible Etiologic Factor in Certain Cases of Pellagra, *Med. Rec.*, New York, Dec. 2, 1912.
Taylor, I. M.: Personal Experience with Some Cases of Nervous and Mental Diseases Showing the Pellagra Syndrome, *Jour. South Carolina Med. Assn.*, November, 1908; abstr., The Journal, Jan. 9, 1909, p. 168.
Singer, H. D., and Pollock, L. J.: The Histopathology of the Nervous System in Pellagra, *Arch. Int. Med.*; June, 1913, p. 565.
Mott, F. W.: Histologic Changes in Nervous System of Dr. Box's Case of Pellagra, *Brit. Med. Jour.*, July 5, 1913.
Green, E. M.: Psychosis Accompanying Pellagra, *Georgia Med. Assn. Jour.*, April, 1913.
Gardner, W. E.: *Pellagra as Related to Insanity*, *Kentucky Med. Jour.*, May 1, 1913.
Tucker, B. R.: Pellagra in Relation to Neurology and Psychiatry, *Am. Jour. Med. Sc.*, March, 1912.

ANTIQUITY OF THE SUTURING OF TENDONS

To the Editor:—Can you tell me who first sutured tendons?

J. H. James, M.D., Mankato, Minn.

Answer.—We do not know who first sutured tendons. It was probably done before the dawn of medical history, for we find Galen already giving his reasons why and when it should not be done, and discussing the whole subject. From then down almost every great surgeon has mentioned the subject of suturing tendons. It is one of those things that seem always to have been done. Of course, the method or technic has constantly changed and undergone improvements, as in other operations; but the originator of the idea or the first one to do it is certainly lost in antiquity.

STATES WITH WHICH PENNSYLVANIA RECIPROCATES

To the Editor:—Please tell me with what states Pennsylvania reciprocates. S. W. R.

Answer.—Pennsylvania has reciprocal relations with the following states: Arkansas, Colorado, Delaware, District of Columbia, Georgia, Indiana, Louisiana, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New Mexico, Ohio, Vermont, Virginia, West Virginia, Wisconsin and Wyoming.

CAMMIDGE REACTION

To the Editor:—Please explain the Cammidge reaction.

G. Mrs, M.D., Cullman, Ala.

Answer.—The Cammidge reaction depends on the presence in the urine of an unknown substance, probably a carbohydrate. It was believed at one time to be due to glycerin and later to a pentose, but these suppositions have not been confirmed. Recent investigations have shown that this reaction is not pathognomonic. It may occur in other conditions than pancreatitis and is not always present in cases of pancreatic disease.

The urine to be tested should be a portion of a twenty-four-hour specimen and must be freed from glucose and albumin. The following is the technic:

Forty c.c. of clear, filtered acid urine are acidified with 2 c.c. of concentrated hydrochloric acid and boiled for ten minutes. The mixture is then cooled and made up to 40 c.c. with distilled water. The excess of acid is then neutralized by the addition of 8 gm. of lead carbonate and the mixture cooled if necessary. The resulting precipitate is filtered off and the filtrate treated with 8 gm. of powdered tribasic lead acetate to remove the glycuronic acid. The mixture is again filtered and the filtrate is treated with 4 gm. of powdered sodium sulphate, heated to the boiling-point, and allowed to cool. The lead sulphate is removed by filtration. Ten c.c. of the clear filtrate are made up to 17 c.c. with distilled water, 0.8 gm. of phenylhydrazin, 2 gm. of sodium acetate, and 1 c.c. of 50 per cent. acetic acid are added and the mixture boiled for ten minutes. While hot it is filtered, and the filtrate made up to 15 c.c. with warm water. The mixture is allowed to cool, when yellow crystals arranged in sheaves and rosettes may be observed under the high-power lens.

Medical Economics

This Department Embodies the Subjects of Post-Graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

INDUSTRIAL INSURANCE IN GERMANY

We have frequently referred to the conflict going on in Germany between the medical societies and the insurance organizations. An article in a recent issue of the *British Medical Journal* reviews the history of this movement most interestingly. After reminding the reader that the present situation is the result of thirty years of conflict, during which many experiments in regulation have been tried, the writer points out that the present imperial insurance order which went into force on Jan. 1, 1914, is an extremely complicated piece of legislation, designed to take the place of all previous laws on this subject.

By the new law, compulsory insurance is extended to over twenty-two million persons, while many more are given an opportunity to take advantage of the scheme if they so desire. It is estimated that in some districts nearly 95 per cent. of the inhabitants will be affected, so that the new law practically produces in Germany a state system of medical relief.

Previous to 1883, conditions in Germany were similar to those which now exist in this country and which existed in England before the passage of the national insurance act. Private practice, lodge practice, contract practice and free dispensaries were all in existence. Many members of the class which are now insured obtained the greater part of their medical attendance and services from free clinics, while many more were members of insurance societies and secured their medical services from lodge doctors at a nominal cost. As the insurance societies increased in number and power, they forced the physicians to enter into agreements clearly to the disadvantage of the latter, requiring them to treat large numbers of insured persons at an absurdly small rate, and refusing to recognize professional organizations in the discussion of conditions.

The medical profession in Germany has always been weak on account of the lack of strong central organization, the Federation of Doctors' Societies being the only organization which could be of any assistance. This body limited its efforts to sending petitions to various legislators without any definite results. In 1900 the Leipsic League was formed, and three years later the Doctors' Federation. This was the beginning of an effective organization of the medical profession. The results are shown by the fact that last fall only 150 physicians out of 32,000 in the German Empire could be induced to accept positions under the insurance societies against the advice of the Leipsic League. The medical profession of Germany has given a remarkable exhibition of self-control and discipline in its recent conflict with the insurance societies.

Last summer, previous to the new law's going into effect, the Leipsic League began the preparation of contracts for physicians with the new insurance societies. The league formulated its minimum terms as follows:

1. The right of the profession to organize to protect itself, and to regulate the conditions of service.
2. Free choice of doctor on the part of the patient, whenever possible.
3. Arbitration courts composed of an equal number of members representing both sides, for the settlement of all controversies.

It will be noted that remuneration for medical services was not included in these terms, it being understood that compensation must vary with local conditions. Negotiations between the federation of insurance societies and the medical organizations, based on the minimum terms outlined, were carried on during the fall. In October, the Leipsic League, in the hope of bringing the two sides together, formulated a tentative agreement containing the three principles adopted by the medical organizations, but making important concessions to the insurance societies, as far as their interpretation was concerned. This proposal the societies refused to accept, and the physicians refused to make any further concessions. The strength of the professional organizations gave the physicians the advantage except in three cities, Berlin, Dresden and Hamburg. On account of the local conditions, it was agreed that no general arrangements would be applicable to Berlin, and accordingly a special arrangement was made for that city. October 26, at a general meeting of the German medical profession held in Berlin, it was decided that no services should be rendered in any district unless satisfactory terms had been obtained in all. As was previously pointed out, this refusal did not apply to the care of individual patients, but only to the treatment of beneficiaries under the insurance companies; that is, physicians refused to care for any persons applying to them for treatment as insured persons, but would care for them as private patients. The possibility of a strike on the part of the medical profession alarmed the governments, and offers of intermediation were made. In some cases the local governments endeavored to force the medical profession to accept the terms offered. As January 1 approached, when the new law was to go into force, the insurance companies were confronted with the necessity of importing medical men from outside, or paying the insured person in place of furnishing him medical treatment. The first alternative was impossible as no qualified physicians were available outside of those in the organization. It was recognized that the second plan would involve heavy expense on the societies. At the eleventh-hour, the medical faculties of the German universities offered their services in bringing about an understanding. They were successful in bringing the parties to an agreement, and what is now known as the Berlin agreement was accepted by both sides. It provides for the formation of contract committees composed of representatives of the medical profession and of the insurance societies; free choice of physicians within the list of employees of the insurance societies, and arbitration courts composed of an equal number of representatives of physicians and insurance societies, and leaves the determination of remuneration on a local basis. The contracts under this agreement are to run for ten years. The Leipsic League agreed to find positions for the strike-breaking physicians who had not been employed by the insurance societies. There is at present some disagreement as to the payment of indemnity for the cancellation of the contracts with these physicians which may cause trouble later on. In some districts new contracts have been prepared in accordance with the Berlin agreement; in others, the matter is still under discussion. Considerable time and patience will be required before the situation is adjusted throughout the German Empire.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, April 7. Sec., Dr. John Wix Thomas, Phoenix.

Canada: Alberta, April 24. Dr. Cecil E. Race, Registrar of the University of Alberta, Edmonton.

Colorado: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Idaho: Wallace, April 7. Sec., Dr. John F. Schmershall, Jerome.

Louisiana: New Orleans, May 4. Homeopathic Board, Sec., Dr. Edward Harper, 702 Macheca Bldg., New Orleans.

Minnesota: Minneapolis, April 7-10. Sec., Dr. Thomas McDavitt, 814 Lowry Bldg., St. Paul.

Montana: Helena, April 7. Sec., Dr. Wm. C. Riddell, Helena.

Nevada: Carson City, May 4. Sec., Dr. Simeon L. Lee, Carson.

New Mexico: Santa Fe, April 13. Sec., Dr. W. E. Kaser, East Las Vegas.

Oklahoma: Oklahoma City, April 14. Sec., Dr. John W. Duke, Guthrie.

Rhode Island: Providence, April 2. Sec., Dr. Gardner T. Swarts, Room 315, State House, Providence.

Tennessee: Memphis, Nashville and Knoxville, first week in May. Sec., Dr. A. B. DeLoach, Memphis.

Utah: Salt Lake City, April 6-7. Sec., Dr. G. F. Harding, 403 Templeton Bldg., Salt Lake City.

West Virginia: Charleston, April 21. Sec., Dr. S. L. Jepson, 81-12th St., Wheeling.

College Adopts Higher Entrance Requirements

An official notice from the Medical College of Virginia states that beginning with the session of 1914-1915 that school will require for admission, in addition to a four-year high-school course, one year of college work, including physics, chemistry, biology and German or French; and that beginning with the session of 1915-1916 this requirement is to be further increased to two years of preliminary college work.

This makes thirty-six medical colleges, therefore, which either are already requiring two years or more of college work for admission, and which have adopted the standard, to become effective in 1915 or thereafter. There are also seven state licensing boards which have adopted two years of college work as their minimum requirement of preliminary education. These states are Colorado, Indiana, Iowa, Kentucky, Minnesota, North Dakota and South Dakota.

Florida November Report

Dr. E. W. Warren, secretary of the Florida Regular Board of Medical Examiners, reports the written examination held at Jacksonville, Nov. 12-13, 1913. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 76, of whom 55 passed and 21 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Birmingham Medical College	(1913)	84.4
University of Alabama..(1907) 86.3; (1911) 79.6;	(1913)	80.8, 85, 88.3.
Georgetown University	(1909)	82.4
Atlanta Coll. of P. & S......(1910) 77.4, 79.3;	(1913)	89.4
Atlanta Medical College	(1895)	*67.8
Atlanta School of Medicine..........(1911) 75;	(1912)	80.4
University of Georgia	(1913)	76.1, 78.6
Bennett Medical College	(1907)	89.1
Chicago Medical College	(1891)	78.4
College of Medicine and Surgery, Chicago	(1912)	85.6
College of Physicians and Surgeons, Chicago	(1900)	89.8
Metropolitan Medical College, Chicago	(1899)	75
National Medical University, Chicago	(1909)	77.7
Rush Medical College	(1897)	*73.6
State University of Iowa, College of Medicine	(1889)	82
Hosp. Coll. of Med., Louisville......(1884) 58;*	(1907)	75.1
Kentucky School of Medicine	(1889)	*64
University of Louisville..........(1881) 55.3;*	(1913)	79.1
Tulane University ....(1910) 78.1;	(1913)	86.3, 87.4
College of P. & S., Baltimore.. ...(1898) 82.1;	(1906)	78.8
Maryland Medical College.........(1911) 75.7;	(1912)	81
University of Maryland	(1912)	81.3
College of P. & S., Boston	(1911)	75
Harvard Medical School	(1906)	82.7
Detroit Medical College	(1890)	*65.8
University of Michigan, Dept. of M. & S.	(1880)	77.1
Hamline University	(1896)	86
Missouri Medical College	(1894)	*68
Cornell University	(1909)	81.4
Medical College of Ohio	(1878)	*61.6
Western Reserve University	(1897)	78.8
Jefferson Medical College	(1901)	75
Vanderbilt University (1909) 92;	(1913)	82.1, 84.6, 85.7, 86.6, 90.8
University of Virginia............(1894) 68.3;*	(1911)	88
National University, Athens, Greece	(1898)	85.7

* Allowed credits for years of practice.

FAILED

College	Year Grad.	Per Cent.
Hahnemann Hospital College, San Francisco	(1900)	71
Atlanta College of P. & S.	(1911)	57
Southern College of Med. and Surg..(1912) 61.8;	(1913)	47.1, 66.6
University of Georgia..............(1911) 55.4;	(1912)	67.1
Illinois Medical College	(1904)	67.6
Hospital College of Medicine, Louisville	(1890)	49.8
American Medical College	(1910)	71.4
Barnes Medical College	(1906)	68
St. Louis College of Phys. and Surgs	(1906)	72.6
Lincoln Medical College	(1908)	69.4
Leonard Medical School	(1911)	69
Meharry Medical College	(1913)	61.8, 71.3
Memphis Hospital Medical College	(1912)	58.6
University of West Tennessee	(1911)	55.4
Laval University	(1898)	54.1+5†
University of Havana, Cuba	(1912)	70.8
Non-graduate		45.7+15‡

† Five credits allowed for years of practice.
‡ Fifteen credits allowed for years of practice.

Virginia December Report

Dr. Herbert Old, secretary of the Virginia State Board of Medical Examiners, reports the written examination held at Richmond, Dec. 16-19, 1913. The number of subjects examined in was 17; total number of questions asked, 99; percentage required to pass, 75. The total number of candidates examined was 31, of whom 18 passed and 13 failed. Seven candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1913)	83
University of Illinois	(1912)	75
Johns Hopkins University ....(1910) 90;	(1912)	90
Maryland Medical College	(1909)	75
Leonard Medical School	(1912)	75
Woman's Medical College of Pennsylvania	(1908)	82
University of Pennsylvania	(1913)	84
Medical College of Virginia (1912) 75;	(1913)	75, 75, 77, 78, 78, 79, 80, 86.
University of Virginia	(1872)	81

FAILED

College	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons	(1907)	57
University of Louisville	(1912)	65
Lincoln Memorial University	(1912)	61
Medical College of Virginia	(1913)	66, 68.8, 69, 70, 70, 71, 72, 72.8.
University College of Medicine, Richmond	(1913)	71, 72

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University ....(1905)	(1912)	Dist. Colum.
Northwestern University	(1899)	Wisconsin
Harvard Medical School	(1908)	Indiana
Starling Medical College	(1904)	Ohio
University College of Medicine, Richmond	(1910)	W. Virginia
University of Constantinople	(1874)	Arkansas

Vermont January Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written and practical examination held at Montpelier, Jan. 13-15, 1914. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Yale Medical School	(1911)	85.6
Tufts College Medical School	(1913)	86.6
Columbia University, Coll. of Phys. and Surg.	(1912)	83.8
Jefferson Medical College	(1913)	88.1
University of Vermont	(1913)	93.1

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Vermont	(1912)	Maine

Colorado January Report

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the oral and written examination held at Denver, Jan. 6, 1914. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 8, all of whom passed. Fifteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Colorado	(1913)	76.7, 77.9, 79, 79.7, 80, 80.7, 86.5, 87.5.

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Indiana Medical College	(1906)	Indiana
Keokuk Medical College	(1894)	Missouri
Keokuk Medical College, Coll. of Phys. & Surgs.	(1904)	Iowa
Kansas Medical College	(1893)	Missouri
Baltimore University School of Medicine	(1896)	Oklahoma
Harvard Medical School	(1910)	Maryland
University of Michigan, Dept. of M. and S.	(1906)	Oregon
University of Michigan, Homeopathic College	(1888)	Colorado
Barnes Medical College	(1907)	Texas
Eclectic Medical University, Kansas City	(1900)	Missouri
Columbia University, College of Phys. and Surgs.	(1911)	New York
Medical College of Ohio	(1902)	Ohio
Miami Medical College	(1903)	Ohio
Hahnemann Med. College and Hospital, Phila.	(1885)	Penna.
University of Pennsylvania	(1913)	New Jersey

The following questions were asked:

ANATOMY

1. Discuss formation and characteristics of the spinal column. 2. Describe the mastoid cells and antrum, and locate point of surgical access. 3. Name and locate all important bony landmarks of the upper extremity. 4. Describe the axilla. 5. How are the large arterial trunks located with reference to external violence; illustrate clearly by two examples. 6. Give the course and branches of the celiac axis, naming organs which each branch supplies. 7. Describe fully the gall-bladder and system of bile-ducts. 8. Explain clearly how the uterus is supported and maintained in its normal position. 9. Describe the formation of the superficial and deep palmar arches, giving superficial landmarks. 10. Give the course and branches of the musculospiral nerve; what class of injury may impair its integrity?

PHYSIOLOGY

1. Describe the digestive action of the pancreatic juice. 2. Give three general functions of fats in the body. 3. Explain the phenomena of muscular contraction. 4. Describe the physiology of normal menstruation. 5. Name the divisions, and describe the physiology of the brain. 6. Describe the minute structure and mention the various functions of the skin. 7. Discuss the general physiologic importance of the bile. 8. Define: tidal air, lymph, enzymes, mucus and peristalsis. 9. Discuss the organs of circulation, describing (*a*) the physical or mechanical factors of the flow; (*b*) the special properties of the heart-muscles and the muscles of the blood-vessels; (*c*) the innervation of the heart and vessels. 10. Give your theory as to the cause of natural sleep; and what are its normal effects on the functions of the body?

CHEMISTRY

1. What is organic chemistry? 2. Give chemical formula of chloroform, and a brief résumé of effects of overdose. 3. How is nitrogen monoxid obtained and what are its properties? 4. What chemical reaction takes place when salol is administered? In what form and how is it eliminated? 5. How is commercial oxygen (tank oxygen) prepared? 6. What is the principal chemical reaction of sodium chlorid in the body? 7. Describe in words and chemical symbols the process of making ferric chlorid. 8. Give tests for tannin. From what source is it derived and for what is it used in medicine? 9. Give properties of, and tests for cocain. 10. What is pepsin, and how does it act on proteins?

PATHOLOGY

1. What is the pathology causing anasarca? 2. What are the pathologic causes of chronic gastric dilatation? 3. Give the pathology of gastric ulcer. 4. What are the conditions predisposing to intestinal stasis? 5. Explain the pathology of lobar and lobular pneumonia. 6. Give the morbid anatomy associated with angina pectoris. 7. Differentiate between fatty degeneration and fatty infiltration. 8. Define exudation and transudation. 9. Give the pathology of cerebral apoplexy. 10. Explain infarction, embolism, thrombosis.

N. B.—In answering these questions do not mention clinical manifestations.

TOXICOLOGY

1. If you were called to see a case with the following symptoms, what would be your diagnosis? Dryness of the throat, accompanied with tingling and numbness of the lips, throat and tongue, followed by nausea and vomiting, with pain and tenderness of the epigastrium. Dimness of vision, tinnitus aurium, frothing at the mouth, great muscular prostration, inability to walk, slow feeble pulse, difficulty of breathing, dilated pupils, convulsions and death. 2. Such being your diagnosis what would be your treatment? 3. Give symptoms of an overdose of chloroform. 4. Give symptoms of one poisoned with acetate lead. 5. Give treatment and post-mortem appearance. 6. Give signs of death by drowning. 7. Give treatment. 8. Give the symptoms of an overdose of cantharides. 9. Give your treatment. 10. Post-mortem appearance.

SYMPTOMATOLOGY

1. Name the five most common diseases that are attended by a fever of three weeks' or more duration. 2. Give the distinguishing characteristics of each disease you name. 3. Give the causes of hematuria of renal origin and distinguish them. 4. What diseases would occur to you as an explanation of a case of hematemesis? 5. What are the causes of backache in men? 6. Name three of the most common causes of dyspnea. 7. What are the symptoms of tuberculous peritonitis? 8. Name the diseases of which ascites is a symptom. 9. How is an abdominal distention due to fluid to be distinguished from that caused by tumor? 10. Describe a case of locomotor ataxia.

SURGERY

1. Give the pathology and symptoms of carcinoma of the stomach. 2. What would be the symptoms of fracture of the shaft of the femur? 3. Give the diagnosis and treatment of Colles' fracture. 4. What are the common types of dislocation of the shoulder, and how is each reduced? 5. What are the types of inguinal hernia? 6. What are the symptoms and pathology of volvulus? 7. What are the symptoms and treatment of fracture of the clavicle? 8. What are the symptoms of intracranial hemorrhage with pressure in the region of the fissure of Rolando? 9. What are the symptoms of gastric ulcer? 10. What are the symptoms of fracture of the neck of the radius?

OBSTETRICS

1. Describe mechanism in vortex presentation. 2. Describe mechanism in left occipito-anterior presentation. 3. Describe mechanism in face presentations. 4. Briefly describe breech presentation. 5. Mention the varieties of hemorrhage that may affect the pregnant woman, the parturient woman, and the puerperal woman. 6. What is placenta praevia? Give its causes, varieties and symptoms. 7. Name indications for high forceps, and (*b*) low forceps. 8. How would you diagnose the position of the child? 9. Give indications and describe in detail manual aid. 10. Give the indications and conditions requiring cesarean section.

Book Notices

ORGANIC CHEMISTRY FOR ADVANCED STUDENTS. By Julius B. Cohen, Ph.D., B.Sc., F.R.S., Professor of Organic Chemistry in the University of Leeds. Vol. II. Cloth. Price, $4.50 net. Pp. 427, with illustrations. New York: Longmans, Green & Co., 1913.

The first volume of this work was published in 1907, and covered a course of lectures in organic chemistry given by Cohen. The second volume gives special consideration to the physical properties of compounds in their relation to structure, and in general takes up the physical side of organic chemistry, being in the main a supplement and elaboration to the first volume of general organic chemistry. The scope of the book is well indicated by the following subjects, treated in the chapter on the valency of carbon, covering about forty pages: methods of determining valency, valency a variable quantity, tervalent carbon, trophenylmethyl, bivalent carbon, structure of isocyanids, cyanids, fulminic acid, acetylene compounds, nature of unsaturated groups, theory of the double bond, evidence of stereochemistry, theory of free valencies, Werner's theory of unsaturation, equivalence of carbon bonds, theories of valency, valency and physical properties, Werner's theory, valency isomerism, electrochemical theories, electronic theory, Thomson's theory, Stark's theory, theory of Abegg and Bodländer. The work is a thorough and up-to-date text-book on chemical theory as applied to organic chemistry. It is not adapted for use as a text-book in medical schools, but medical students and practitioners who want to keep up with modern chemistry can find no better book of reference.

THE PRINCIPLES OF PATHOLOGIC HISTOLOGY. By Frank B. Mallory, M.D., Associate Professor of Pathology, Harvard Medical School. Cloth. Price, $5.50. Pp. 677, with 497 illustrations. Philadelphia. W. B. Saunders, 1914.

The contents are divided into two parts: general and special histology. The first includes inflammation and repair, retrograde processes, special injurious agents and the lesions they produce, tumors; the second part takes up the changes as seen in special organs. The book is not complete. The author speaks of it as "a framework on which to build in the future if it seems to fill a want"; but so far as general pathologic histology is concerned there are no serious lacunae.

The aim of the author is to present the results of his own study, over a long period, of morbid tissues fixed and stained by the best methods. There is no discussion of the literature, no balancing or summary of divergent views. "Not the literature of a pathologic subject but perfect tissue, fixed and prepared by the best methods, affords the greatest opportunities to advance," says the author in his preface. Such single-hearted devotion runs the danger, however, of limitation of the field of vision and of missing connections, so to speak, at important junction points of pathologic histology with other branches of pathology. There are indications that the author has not wholly escaped this danger. His naive and unfortunate remark in the preface about the experimental method cannot be accounted for in any other way; and the failure to consider fully the part played by the products of parenteral protein digestion in causing lesions, especially in infectious processes, may be cited as an instance of missing a connection. Another result, in part at least, of this self-imposed limitation of view, is seen in an unwarranted positiveness and finality of statement. This manner of expression tends to produce the impression on the student that questions are settled for all time that as yet are far from being settled (except in the mind of the author). Thus, notwithstanding the author's statement, it is not settled or accepted that Hodgkin's disease and the leukemias are tumors or that the leukocytes produce antitoxins. A slight modification of phraseology would obviate such violations of the principles of good, stimulating teaching, and yet give the author full scope to express his own views. In spite of these shortcomings, the book is noteworthy indeed because it gives us a record of the author's splendid work and observations in pure pathologic histology. The descriptions of cells, fibers and lesions are good, the language is clear, and the insistent advocacy of high technical standards is wholesome. The feature that merits and will receive general and unqualified praise is the illustrations. Here a standard has been reached that it will be difficult to excel. The question arises whether it would not have been of advantage to indicate the magnification and staining methods, especially in the case of the colored figures. Be that as it may, the large number of successful reproductions of appearances as seen in specimens prepared with masterful technic will be of the greatest help to the student of pathologic histology.

Die Vitamine, [illegible] B[illegible] für Physiologie und Pathologie mit Beson[illegible] der Avitaminosen: (Beriberi, Skorbu[illegible] Anhang: Die Wachstumsubstanz und [illegible] Casimir Funk, Leiter des Physiologisch-[illegible] Paper. Price 8.60 marks. Pp. 193 w[illegible] W[illegible]baden: J. F. Bergmann, 1914.

The name "avitaminoses" is suggested for the diseases caused by lack of vitamins in the diet. The best understood diseases of this kind are beriberi and scurvy. The author argues strongly in favor of placing pellagra among the avitaminoses. He also presents interesting ideas and speculations in regard to the part that vitamins possibly play in rickets, in growth, and in the development of cancer. No doubt some readers will find the tone of the book occasionally rather self-assertive; nevertheless, it is a stimulating presentation of the facts and the outlook in this new field in the pathology of nutrition.

Dental Electro-Therapeutics. By Ernest Sturridge, L.D.S., D.D.S. Cloth. Price, $2.75 net. Pp. 318, with 154 illustrations. Philadelphia: Lea & Febiger, 1914.

This work is divided into two parts. The first is devoted to the general principles of electrophysics so far as a knowledge of these principles is necessary to a clear understanding of the use of the various types of electrotherapeutic apparatus. There are several works of a similar nature on the market, but none of them cover the same field as this volume. The author carefully explains different appliances and the methods by which they may be used in dental practice. The second part of the work deals with the application of electrotherapeutics in anesthesia, the bleaching of teeth, neuralgia, pyorrhea alveolaris and other diseases in dental practice. The work should be in the hands of every dentist who is interested in this particular form of treatment.

Hygiene and Public Health. By Louis C. Parkes, M.D., D.P.H., Consulting Sanitary Adviser to H. M. Office of Works, and Henry R. Kenwood, M.B., F.R.S., D.P.H., Chadwick Professor of Hygiene in the University of London. Fifth Edition. Cloth. Price, $3.50. Pp 736, with illustrations Philadelphia: P. Blakiston's Son & Co., 1913.

The last issue of this standard work appeared in 1911. Since that time the book has been carefully revised and new matter introduced, notably a portion on immunity from Elizabeth Fraser's book on this subject. The work is complete, well illustrated and a safe and advisable investment for the physician who is at all interested in the subject.

Miscellany

Bichlorid of Mercury Tablets and the Public

Reports of poisoning by mercuric chlorid tablets are continually appearing in the newspapers. This shows that notwithstanding the repeated warnings as to carlessness in the use of the popular "antiseptic tablets," and the prolonged, excruciating pain suffered by this method of suicide, the tablets still remain, as has been expressed, "a household commodity" easily obtainable from any drug-store. It is true that the public has been aroused to an extent and efforts have been made in several legislatures to enact laws governing the form and the method of marketing these tablets. It is pointed out by M. I. Wilbert, however, in *Public Health Reports*, Nov. 14, 1913, that there is sufficient legislation at present, which, if enforced, would serve as a reasonable safeguard in connection with the sale at retail of this poison. Thirty-eight states include corrosive sublimate specifically in the laws designed to restrict the sale of poisons, and only Utah exempts corrosive sublimate tablets from registration in the poison register. The fact that this poison is named in the list of poisons to be registered by druggists when sold at retail in Pennsylvania led the governor of that state to veto a special act prohibiting the sale at retail of mercury bichlorid except on a physician's prescription. A greater evil in connection with the sale of this poison, as pointed out by Wilbert, is the custom of manufacturers of pharmaceutical preparations in the United States of marketing tablets containing corrosive mercuric chlorid under a name—usually "antiseptic tablets"—without properly indicating the nature of the materials contained therein. Thus, an examination of the current price-lists of five of the larger manufacturers of pharmaceutical preparations in the United States revealed the startling information that not one of them properly designated the presence of this deadly poison in "antiseptic tablets". In the lists referred to, under "corrosive sublimate," "mercuric chlorid" or "mercury bichlorid," cross-references were found to "antiseptic tablets". Under the last designation, without any qualifying words, tablets containing corrosive mercuric chlorid were found in sixteen varying sizes, five different shapes and five different colors, while under the designation "antiseptic tablets," with various qualifying words, as "alkaline," "alkaline improved," "alkaline effervescent," "clover," "detergent," etc., were found tablets which contained comparatively innocuous materials. It will thus be seen that under the simple name of "antiseptic tablets" the layman might unintentionally purchase deadly corrosive sublimate. It is highly probable that the vast majority of persons who buy "antiseptic tablets," as Wilbert says, in "pounds, if not tons . . . annually for other than medicinal purposes" do not know that they contain a dangerously poisonous substance. The fact that they are given a distinctive shape or color does not serve to protect the purchaser if he is uninstructed as to their contents. On the contrary, as Wilbert says, this "would at best tend to elaborate on the misuse of tablets of this kind, rather than to prevent accident, or their use as a poison for suicidal purposes." In fact, they are now sometimes asked for under the name of "blue" tablets, etc. Undoubtedly the fact that they are tablets, easily obtainable, under a totally misleading name, together with the agitation concerning them and their popular use, only serves to increase their sale. The responsibility of the manufacturers in putting out these tablets with insufficient warning as to their dangerous character is great, and should be met in some satisfactory way. The inclusion in the Pharmacopeia of a preparation of mercuric chlorid in tablets under its proper name, with a distinctive form and wrappings, and with a warning as to their poisonous character, such as is provided in the German Pharmacopeia, to which we have heretofore referred (The Journal, April 5, 1913, p. 1083), would be a step in the right direction. Physicians could then prescribe or issue only this preparation, and the public would gradually be educated in regard to this poison. In this connection it should be said that in the first instance the physician is probably largely responsible for popularizing this poison and is deserving of at least some of the censure. As shown in reports published in The Journal from time to time (April 9, 1910, p. 1203; April 30, 1910, p.1459; June 4, 1910, p. 1867; Aug. 26, 1911, p. 755; Jan. 11, 1913, p. 147; Aug. 23, 1913, p. 606; Feb. 14, 1914, p. 535), these tablets have been prescribed or given to patients for antiseptic purposes, without sufficient caution as to their poisonous character, and such acquaintance with them, together with the ease with which they are purchased has led to their popular use.

Shipment of Poisons in the Mails

Confusion has arisen in regard to recent interpretations by the post-office authorities of the statutes and regulations concerning the transmissions of poisons and articles containing poisons through the mails. In February a complaint was filed with a United States commissioner in New York against the New York agent of one of the large pharmaceutical manufacturing houses on account of the shipment from New York to Boston by parcel post of a package of 500 tablets, each containing $\frac{1}{64}$ grain of heroin, with small quantities of two other (innocuous) ingredients. In connection with this case a statement is quoted of an assistant district attorney to the effect that it is a crime under the laws of the United States "to mail heroin even to physicians." As is known, the Food and Drugs Act of June 3, 1906, respecting cocain, morphin, heroin, etc., requires that the proportion or quantity of any of these ingredients be stated on the label; but this has no relation to their shipment through the mails. Section 217 of the U. S. Criminal Code concerning unmailable matter says:

> "All kinds of poisons, and all articles and compositions containing poisons . . . whether sealed as first-class matter or not, are hereby declared to be non-mailable matter, and shall not be conveyed in the mails or delivered from any post-office or station thereof, nor by any letter-carrier; but the Postmaster-General may permit the transmission in the mails, under such rules and regulations as he shall prescribe as to preparation and packing, of any articles hereinbefore described which are not outwardly or of their own force dangerous or injurious to life, health or property."

In July, 1913, a regulation (superseding a previous one annulled) was promulgated embodying the requirements of the foregoing section of the statutes in regard to the mailing of "medicines and anesthetic agents which are not outwardly of their own force dangerous or injurious to life, health or property." This regulation leaves unsettled the question of the mailing of medicines such as the package of heroin tablets in question, in that the term "poison" has never been exactly defined. One attempt to secure a ruling on the word "poison" with reference to the transmission of drugs through the mails brought the following from the Post-Office Department:

> "The Department has fixed no specific proportions of poisons which mailable medicines may contain, but it may be stated that medicines which contain sufficient poison to render the whole compound a poison are not mailable."

Another communication from the Post-Office Department on the same subject said:

> "Medicines containing a small proportion of poison may be sent in the mails, but medicines containing a sufficient quantity of poison as to render the compound a poison are not mailable."

These replies or rulings manifestly leave the question in a very uncertain state, and a definite ruling is required. In the meantime the safe course is to refrain from sending through the mails any preparation containing narcotic or other drugs which in any quantity might be "dangerous or injurious to life, health or property." Obviously some more liberal interpretation of the statutes relating to such drugs as morphin, heroin, cocain, etc., is needed; otherwise country physicians and others who must depend on the mails for quick transportation of medicines in emergencies will be inconvenienced. These drugs are not, of course, prohibited from transmission by means other than the mails. In the outcome of the suit mentioned in the beginning of this article it is hoped that the question of sending such drugs as heroin tablets through the mails may be settled.

A Hopeful Experiment in the Treatment of Tuberculosis.—An experiment in the management of tuberculosis among poor families in New York has given gratifying results in many directions during the first year of its trial. It has been conducted under the supervision of the New York Association for Improving the Condition of the Poor. In the printed report (Publication 78) it is called "The Home Hospital Experiment," which accurately describes the idea. The combined treatment of poverty and tuberculosis by removing to better surroundings whole families in which the disease was found, either in the bread-winner or the mother—or in some instances in practically every member of the family—is the essential part. More specifically it was desired to demonstrate by a three-year experiment that sanitary housing, ample sunshine and fresh air, good and abundant nourishment, freedom from undue work and worry, reasonable segregation, skilful medical care and constant nursing supervision will prevent the spread of tuberculosis from the sick to the well members of a family, especially preventing the infection of the children. The experiment aimed to cure those in the early stages of the disease, to secure improved health and larger earning capacity to patients whose cases were moderately advanced, and to complete, at least in instances, the rehabilitation of the family, physically, economically and socially. During the first year the Home Hospital occupied twenty-four units of one of the modern tenement buildings in New York, and twenty-seven families, selected after careful investigation, containing 135 individuals with seventy-nine patients or suspects, were cared for. All members able to do so were required to work and to contribute to the support of the family. A depot containing all supplies needed was established, and goods were sold at practically cost prices. Direction and advice were given as to the amount and kind of supplies purchased in order to furnish abundant and proper nourishment for all the members of the families. Supervision was exercised over matters of work, rest, recreation, personal hygiene, etc., and medical and nursing attention were provided as necessary. The results of the experiment, it is believed, proved the feasibility and value of the plan. Eleven of the families, containing twenty-three patients, twelve of whom were wage-earners, were discharged. Six of the eleven families were rehabilitated physically, socially and economically, to the extent that each member was restored to health; all had learned the lessons of personal hygiene; the mothers had learned valuable lessons in home economy, as how to buy to advantage, what to cook and how to prepare it to secure the maximum of nourishment at minimum cost, and each family was able and earned sufficient to support itself under normal conditions. When admitted, four of the families were almost absolutely dependent, with the average weekly income of all a little in excess of $6. When they moved away from the hospital their average incomes had increased to almost $15 a week. The results in the infected cases were said to compare favorably with those of sanatorium treatment. In four cases there was no progress. Three of these patients were dismissed for refusal to follow advice; the other patient, with an advanced case, died. In eighteen positive cases in the hospital six months or over in which the patients followed advice and direction, eleven, or 61 per cent., were apparently cured; in four, or 22 per cent., the disease was arrested, and in two, or 11 per cent., there was much improvement. The average increase in weight of each adult during the average residence of 233 days was 9.9 pounds. The increase was greatest during the first two months. In most instances the children, who were practically all underdeveloped on admission, at the end of six months had reached a weight normal for their age, and had become wholesome, bright-eyed and happy. The cost of the experiment was considerably less than expected, but it was estimated that there was a saving of

$11,000 over the cost of caring for the same number in sanatoriums, preventoriums and hospitals. It was found also, incidentally, that from $1,100 to $1,200 is the minimum income sufficient to maintain a normal standard of living for an average family of five in the Borough of Manhattan. The report gives full details as to the method of selecting the families and all other matters pertaining to the experiment, which was a highly suggestive and practical one, and it is full of possibilities in the public handling and management of this wide-spread disease. The experiment is to be continued.

Radium and Ethics.—The employment of radium in the treatment of cancer is the latest medical innovation to receive the sort of newspaper discussion to which we have often referred as misleading and injudicious. The *Edinburgh Medical Journal* (The Radium Boom, editorial February, 1914) offers drastic criticism of the ethics of recent newspaper comment on radium. It cites interviews printed in the London *Times* with Sir Frederick Treves, Sir M. Morris and Captain H. Pinch concerning the Radium Institute, with which they are connected, and discusses particularly an interview with Dr. Lazarus Barlow in which the latter makes some very optimistic statements concerning radium in the treatment of cancer, in comparison with which the statistics of the Middlesex Hospital for 1912 and 1913 with and without the use of this agent are quoted. The criticism, also printed in the *Times* two days later, by members of the surgical staff of the Middlesex Hospital, that their experience did not correspond with the remarks of Dr. Lazarus Barlow, leads the *Edinburgh Medical Journal* to remark: "This discussion of the curative value of a particular substance in a particular disease in the columns of the public press is most unseemly, and it seems to us it is time for the professional papers to protest." Referring more particularly, perhaps, to the enthusiastic statements of Sir Frederick Treves and his associates concerning the efficacy of bottled radium emanations in the treatment of such formidable conditions as rodent ulcer, carcinoma, sarcoma, keloid and arthritis deformans, and their availability at any point in the United Kingdom, the *Journal* says: "Is there much distinction between the advertisements of any catchpenny patent cure-all and such announcements as these? Owing to the marvelous physical properties of this substance [radium], the public is only too ready to believe any tale as to its value as a cure for gout, rheumatism and cancer, but the medical profession should absolutely refrain from publicly encouraging such notions, if for no other reason than to prevent the false hopes that may be raised by newspaper interviews, which are often misleading to the laity, and require interpretation by an expert. It is surely incumbent upon us as a dignified scientific body, one of whose mottoes is *Noblesse oblige*, to discountenance and discourage all such methods of advertisement." Grievous as are the ethical and advertising shortcomings of medical newspaper interviews, we feel that their most serious aspect is in the unjustifiable hopes of cure that are bound to be raised in hopelessly incurable persons.

Cleanliness in the Preparation and Serving of Food.—A committee has been appointed by the Civic Federation, of which Mr. Vincent Astor is chairman, for the study of sanitary and hygienic food control, and to encourage inspection of the conditions under which foods are produced. Such foods as milk, butter, fish and shell-fish, which are liable to carry germs of tuberculosis, typhoid fever, measles, scarlet fever, etc., will be given special attention. It is believed that the workmen handling these products at their origin should be medically inspected. In commenting on the purposes of this committee, E. E. Rittenhouse, of the Life Extension Institute, insists that this inspection and care should include also those who handle the food at the point of consumption. "For what will it avail," he says, "to have pure and healthful food delivered at homes, hotels, etc., if it be contaminated by persons who serve it to the consumers." He believes that householders are not so careful as are hotels and restaurants to see that the employees who prepare their food are in good health, and that they are cleanly in their habits and methods of preparing foods, and probably few or none of them realize the need of sending their servants to the family doctor occasionally to see if they are jeopardizing the health of the family by some developing malady.

Technic of Examination for Hookworm Ova.—A method of preparing and staining specimens for examination for hookworm ova is described by Mark J. White, M.D., in *Public Health Reports* as follows: Agitate about 0.5 gm. of feces with 5 or 6 c.c. of water in a small test-tube. Strain through two layers of gauze to remove particles of feces and wash the residue with a sufficient quantity of water so that the total filtrate will fill a centrifuge-tube. Add to the filtrate and allow to diffuse therein 5 drops of a solution of toluidin blue in a 2 per cent. aqueous solution of phenol. Centrifuge for two minutes. Decant all supernatant fluid. Place two oeses of the sediment on a slide and spread by gentle pressure with a cover-glass. Examine with a magnification of 105 times in a subdued light (oc. 4, ob. 3 Leitz or equivalent). The dye imparts blue and purple tints to the fecal material and a light-brown tint to the shells of the hookworm eggs. The specimens may be mounted by rimming with paraffin.

Medicolegal

Liability of Employer for Surgeon's Malpractice—Admissibility of Evidence

(Simon vs. Hamilton Logging Co. (Wash.), 136 Pac. R. 361)

The Supreme Court of Washington says that it has held that a company employing a surgeon for the benefit of its men, and without profit to itself, is not liable in any event, but that the measure of its duty is to exercise reasonable care in the selection of a competent surgeon. The court thinks that the rule is supported by reason, as well as by the better authority, and it has determined to adhere to the rule without reopening the discussion, although it was invited to review and distinguish its cases, and to declare the contrary rule.

An instance of alleged malpractice by the surgeon occurring some six years before the contract of employment was entered into was clearly too remote, and proof thereof was properly rejected by the court, to show that the surgeon was incompetent and unskilful. Nor can incompetency, as a rule, be shown by proof of a single act of negligence, but it is proper to show repeated acts of carelessness and incompetency as touching the question of whether the employer knew, or might have known, that the surgeon was incompetent, if it had exercised ordinary care in his selection or retention.

What the surgeon in question may have done or omitted to do after he ceased to treat the plaintiff could not be held to bind the logging company, even though knowledge had been brought home to it, for the very act may have been the culminating circumstance that made his acts subject to the common knowledge of men in and about Hamilton. The company's liability must rest on a want of due care in the selection of the surgeon, or in its negligence in retaining him at the time the plaintiff was treated. This argument applied also to an offer to prove that at the time of the trial, the surgeon's reputation was that of an unskilful and incompetent person. It must be remembered that the evidence of the surgeon's reputation as to competency, in so far as it was admissible here, was not for the purpose of proving his negligence at the time of his treating the plaintiff, but was for the purpose of proving the negligence of the logging company in employing him after knowledge thereof on the part of the company. What the surgeon may have done after ceasing to treat the plaintiff clearly had nothing to do with influencing the logging company, one way or the other, in employing or continuing the employment of the surgeon up to the time he treated the plaintiff.

Nor was the testimony of non-professional witnesses competent to prove that the surgeon had negligently and unskilfully treated two confinement cases, four and eight months, respectively, prior to the time of his treating the plaintiff, proof of no facts having been offered, from which it might be inferred that the logging company operating two miles away had, or might have had, knowledge of those cases, if indeed incompetency as an obstetrician would, in any event, be held to imply incompetency in the treatment of men employed in a logging camp.

Relative Weight of Medical and Lay Testimony as to Mental Capacity

(Austin vs. Austin (Ill.), 103 N. E. R. 268)

The Supreme Court of Illinois holds that the testimony of medical witnesses, who testified on behalf of the contestants of a will, was not entitled to greater weight than the testimony of non-medical witnesses, who testified for the proponents of the will, as to the mental capacity of the maker of the will. The court says that it has never been held in Illinois that the testimony of physicians on the subject of mental capacity is entitled to any greater weight than that of laymen who are men of good common sense and judgment. In *Carpenter* vs. *Calvert*, 83 Ill. 62, it is said: Physicians may be regarded experts as to the condition of the body, and as to what diseases tend to impair the mind, but it does not follow, from the mere fact that they are physicians, that they are any better judges of the degree of mental capacity than other men of good common sense.

Board of Health Creature of Statute

(Village of Carthage vs. Colligan (N. Y.), 144 N. Y. Supp. 468)

The Supreme Court of New York, Appellate Division, Fourth Department, says of a village board of health that it was purely a creature of statute, having only such limited powers as might be delegated to it by the legislature, and such incidental powers as would enable it to effect the purposes for which it was created. While its efforts toward the suppression of insanitary conditions must be applauded, nevertheless, when it seeks to impose penalties and collect them, it is held to a strict compliance with every statutory preliminary leading up to the collection of the imposed penalty. If in any particular there is a deviation from the path which the legislature laid down for it to travel, such omission is a fatal one, of which the accused may take advantage.

Sale of Practice and Good Will in Bankruptcy Proceedings

(In re Myers (U. S.), 208 Fed. R. 407)

The United States Circuit Court of Appeals, Seventh Circuit, holds that the medical and surgical practice and good will of a physician are not subject to sale in bankruptcy proceedings. The court says that in this case the bankrupt petitioned for a review and revision of an order in bankruptcy, directing the sale by the trustee in bankruptcy, among other things, of "the medical and surgical practice and good will of said bankrupt, Jacob Myers, together with the leasehold interest of said bankrupt in and to the office formerly occupied by Dr. S. Lewin (one of the bankrupt's creditors), and now occupied by said bankrupt as a doctor's and surgeon's office." It appeared that the bankrupt was a medical practitioner; that he purchased the location and good will of Dr. Lewin and was engaged in practice thereunder; that his indebtedness to Dr. Lewin arose out of such purchase. The right of the trustee to take and sell whatever property interest might remain out of this purchase from Dr. Lewin was neither challenged nor questionable. But the terms of the order did not support the contention of counsel for the trustee, that such property interest was intended by the above-mentioned provision thereof as the subject-matter of the sale. Whatever may have been the purpose, the "medical and surgical practice and good will of said bankrupt" were plainly specified as its subject-matter, and no doubt is entertainable that the provision to that end was unauthorized. It comprised practice and good will attributable to the personality, reputation, or skill of the bankrupt, which was entirely of a personal nature and not subject to involuntary sale for the benefit of creditors or otherwise. It goes without saying that patients of the bankrupt, either present or prospective, could not be required to transfer their treatment or allegiance to another practitioner. So, the only force of the sale thus proposed would be to deprive the bankrupt of the exercise of his profession in any locality; and such deprivation is plainly unauthorized in these proceedings. The petitioner, therefore, was entitled to a modification of the order of the district court, to exclude the above-mentioned provision for the sale of the "practice and good will of the bankrupt," and it is ordered that modification be made accordingly. The order may be amended, however, by the district court, if so advised, to authorize the sale of any subsisting rights acquired by the bankrupt under his purchase from Dr. Lewin, and any outstanding accounts or credits which may be subject to sale, together with the leasehold interest described in the order.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

Alabama Medical Association, Montgomery, April 21-24.
Am. Assn. of Genito-Urinary Surgs., Stockbridge, Mass., May 15-16.
Am. Assn. of Pathologists and Bacteriologists, Toronto, Apr. 10-11.
American Dermatological Association, Chicago, May 14-16.
American Neurological Association, Albany, May 7-9.
American Ophthalmological Society, Hot Springs, Va., May 12-13.
American Surgical Association, New York, April 9-11.
Arizona Medical Association, Tucson, April 21-22.
Association of American Physicians, Atlantic City, May 12-13.
California State Medical Society, Santa Barbara, April 14-16.
Florida Medical Association, Orlando, May 13-15.
Georgia Medical Association, Atlanta, April 14-16.
Iowa State Medical Society, Sioux City, May 13-15.
Kansas Medical Society, Wichita, May 6-7.
Louisiana State Medical Society, New Orleans, April 20-23.
Maryland Medical and Chir. Faculty, Baltimore, April 28-30.
Mississippi State Medical Association, Columbus, April 14-16.
Missouri State Medical Association, Joplin, May 12-14.
Nat. Assn. for Study and Prev. of Tuberculosis, Washington, May 7-9.
Nebraska State Medical Association, Lincoln, May 12-14.
New Hampshire Medical Society, Concord, May 13.
New York State Medical Society, New York, April 28-30.
North Dakota State Medical Association, Grand Forks, May 13-14.
Ohio State Medical Association, Columbus, May 5-7.
Oklahoma State Medical Association, Guthrie, May 12-14.
South Carolina Medical Association, Florence, April 14-16.
Tennessee State Medical Association, Memphis, April 7-9.
Texas State Medical Association, Houston, May 12-14.
West Virginia State Medical Association, Bluefield, May 13-15.

THE NEW YORK NEUROLOGICAL SOCIETY

Regular Meeting, Held Feb. 3, 1914

The President, DR. SMITH ELY JELLIFFE, in the Chair

Cerebrocerebellar Diplegia

DR. L. PIERCE CLARK: The case was that of a boy aged 10 whose family history was negative aside from the mother having suffered from a severe shock and an incipient abortion before the birth of the child. The child weighed 7 pounds at birth, was puny and delicate; was a restless, crying baby. He walked at 3 years, with a stumbling, wide, straddling gait, and often dragged his feet. He talked at 3 years of age, but the speech continued to be stammering, indistinct and slurring. His balance was always poor, and he suffered frequent falls. The boy continued to show dysmetria, ataxia and hypotonia, which was partially recovered from at the time the first examination was made last autumn. The boy at that time was slender and poorly nourished, and was about three years under growth. The Binet-Simon test showed that he was about 6 years of age mentally, but in motor coordination and control he was not equal to a child of 2. The physical examination showed extreme flaccidity in all the joints, especially marked in the upper extremities. The case illustrates that probably much of the incoordination of the non-organic feeble-minded may really be dependent on cerrebellar defects as well as a defective cerebral development. The boy improved under training treatment.

DISCUSSION

Dr. W. B. Noyes: About two months ago I saw a boy aged 10, suffering from a certain amount of retardation, a spasticity of the lower extremities, ataxia, an increase of the knee-jerks, an exhaustible ankle-clonus and a Babinski on one side and not on the other, with other reflexes normal. There were choreiform movements closely resembling Sydenham's chorea, but in the opinion of the examiners it was a motor condition secondary to the general condition. The boy showed a very marked hypotonia of the fingers and elbow-joints, but no hypotonia of the lower extremities. The mental condition corresponded to two years' retardation by the Binet-Simon scale, but in general he might be termed an odd rather than a feeble-minded or even a subnormal child. Many tests for mental functions he performed extremely well. His speech was of an infantile type, associated with a deformed palate. According to the mother, there had been a serious asphyxia at birth, lasting nearly half an hour. He did fairly well during his first years, except in a decided delay in learning to talk and walk. She did not notice any stiffness or staggering until he was 4 years old. After an attack of scarlet fever at 5, this became much more marked, and by 7 he showed decided spasticity, ataxia and mental defect. He never learned to control the bladder or rectum normally until a year ago. The peculiar history of progression suggested Friedreich's disease, even more than Little's disease. The extent of the hypotonia almost reached the degree of muscular atrophy of the fingers, suggesting the syndrome of amyotrophic lateral sclerosis. Marked improvement in intellect, speech and gait followed appropriate treatment of massage and tonics.

Vital Staining in Its Relation to Chemotherapy

Dr. F. Tilney: It has been a question in my mind by what avenues salvarsan reaches the nervous tissues, if it arrives there at all. The theory that salvarsanized serum introduced intraspinally penetrates into the depths of the nervous system by means of the lymphatics is based on an assumption in support of which there is little or no anatomic fact. In view of the facts that the vital stains in Ehrlich's hands were the basis of chemotherapy, that such stains and salvarsan are closely allied in their chemotaxis, and also that Ehrlich has found trypan red (a vital stain) to be a trypanocide, it seemed justifiable to use these stains on living animal tissue and especially to observe what happens when *intra-vitam* injections are made intraspinally, intravenously, intra-arterially and subcutaneously.

The cat was selected as the first animal to be observed, and the vital stain, trypan blue, used. The first experiment was the injection into the subarachnoid space of 0.1 per cent. solution of trypan blue. Post mortem it was found that the dura mater had been stained intensely. The brain was stained diffusely. The other organs of the body were not stained. Microscopic preparations showed that the trabeculae of the pia mater extending into the cord and brain as well as the walls of the blood-vessels were stained. It is apparent therefore that trypan blue gets into the substance of the nervous tissue along the lines of these trabeculae and by the blood-vessels. The ganglion cells and nerve fibers were not stained. The next experiment was an intra-arterial injection, which showed a marked staining of the intestines, liver, spleen, skin, kidneys and conjunctiva, but no stain in the central nervous system or its covering. The third injection was made intravenously. The animal was allowed to live for twenty-four hours, as in all the experiments. The dura mater, pia and pituitary body were distinctly stained, although not so intensely as by the intraspinal injection. Frozen sections of this material showed that none of the stain had penetrated into the cord. The last animal was injected subcutaneously, and while it showed the usual staining of the organs, no region or part of the nervous system showed any stain whatever. Undoubtedly the intraspinal introduction of salvarsan seems to be the method of selection, and if the intravenous method is used, large doses must be employed to obtain corresponding results.

DISCUSSION

Dr. I. Strauss: Two years ago I injected a dog with a 1 per cent. solution of collargol into the subarachnoid space, using a fair quantity. The dog lived five or six hours. To my surprise, I found the drug not only throughout the subarachnoid space but also in the central canal of the cord. Clinical experience and a study of the spinal fluid shows that when intravenous injections are given the drug reaches the central nervous system.

Dr. M. Rosenbluth: The results obtained with methylene blue correspond to the degree of concentration of the dye that reaches the central nervous system; therefore in routine work with this method it is always important to be sure that the return of fluid from the veins of the injected animal is well colored with the dye, to make sure that all the intracranial vessels are engorged with the dye; if we wish a more positive elemental stain by this method, we actually sprinkle the powdered methylene blue on the living neural substance *in situ*. The uncertainty of the stain is due not to any uncertainty of chemotaxis but to the uncertainty of bringing the reagent to the tissue to be acted on. That the venous route is feasible is shown by the fair proportion of successful stains by this method, especially if one is careful in fully oxidizing by good exposure to the air.

Four patients received salvarsan treatment, about fourteen intravenous injections; the cerebrospinal fluid was examined for arsenic and it was found in 80 per cent. of the tests.

Dr. S. E. Jelliffe: Arsenic has been found in the central nervous system following the injection of a heterologous serum from another patient. The patients had not received any arsenical compound other than the serum from another treated patient, and yet this admittedly small amount of arsenic had been sufficient to be determined as arsenic in the cerebrospinal fluid.

Barany's Pointing Tests and Theory of Cerebellar Localization

Dr. Philip D. Kerrison: Barany believes that in the cerebellar cortex there exists definite centers, the functional preservation of which has to do with the individual's ability to move the various joints correctly in certain places without the aid of sight. For each joint there are separate centers exerting tonuses in different directions. When one of these centers is destroyed or its function suppressed, the joint involved falls under the control of the opposing intact center, and when the patient is blindfolded and the pointing accuracy tested, the affected limb deviates in the direction opposite to that of the tonus of the destroyed or suppressed center. This is called spontaneous deviation. Normally, irritation of either vestibular apparatus—for instance, by the caloric test—causes deviation of both arms in the direction opposite to the induced vestibular nystagmus. This is called the normal vestibular reaction. In the case of a cerebellar lesion giving rise to a spontaneous outward deviation, as of shoulder- or wrist-joint, appropriate vestibular irritation results in the normal deviation, or reaction, in the arm or wrist corresponding to the sound cerebellar hemisphere, but is without influence on the arm or wrist corresponding to the cerebellar lesion.

DISCUSSION

Dr. L. P. Clark: It is no longer a point of supposition that the cerebrum may and does take on the function of the cerebellum. Sufficient evidence has been brought forward to show that the frontal and parietal lobes compensate for cerebellar defects to an astonishing degree. One case, selected from the literature, showed that in a man who had died of some intercurrent disease, the whole cerebellum was found to be no larger than an English walnut, and yet he had no ataxias or incoordination of any sort. This very factor of brain compensation, especially as regards the cerebellum, would complicate Barany's conclusions considerably, as at present there is no way of knowing whether one is drawing distinctly on a defect in cerebellar tonus, or a cerebral defect of the same function.

Dr. M. Rosenbluth: In considering cerebellar function it is important to bear in mind the work of Luciani, who pointed out that the cerebrum took up the functions, in part, of the cerebellum, as evidenced by the abolition of these activities by destruction of the cerebrum when all of the effects of the cerebellar disturbance had to a degree disappeared.

Dr. F. Tilney: Bolk attempted to demonstrate the functional localization of the cerebellum on the basis of comparative anatomy. His idea is that the central part of the organ had to do with the coordination of axial and paraxial musculature, including the muscles of the eye, tongue, pharynx, larynx and trunk; the lateral portions of the organ have to do with the appendicular musculature, the arms and legs, particularly in animals which use these parts in acts which are not bilaterally coordinated. Rynbeck confirmed this localization by animal experiments and came to the same general conclusions as Bolk, both coinciding very closely with Barany in his observations on the human subject. It is a question whether Barany's conception of "tactile orientation" can, in any sense, be accepted as a definite cerebellar function.

Dr. W. Timme: In the last six or nine months Barany made some interesting experiments on students by poisoning them with various drugs, chief among which was alcohol in the form of cognac. This was administered in one dose of 200 gm., and the various tests for cerebellar activity were made a few minutes thereafter, lasting for one or several hours, depending on the condition of the student. In many cases Barany found a simple exaggeration of the normal outward and inward pointing deviations, and only a slight change in the nystagmus, sometimes without vertigo; but of chief interest is the finding that the perception of turning after the turning is completed is much diminished from the normal, so that the tendency to a loss of equilibrium and to fall in various indeterminate directions is increased. With a normally functioning cerebrum, these perceptions of motion after the motion is over persist longer and so guard the individual against falling. These experiments show the interrelation of the cerebrum and cerebellum.

Dr. I. Abrahamson: The pointing test is valuable not only in cerebellar disease but also in involvement of the parietal lobes. In two cases of parietal neoplasm overreaching occurred in both, but the directions were different—opposed to each other.

Jung's Libido Theory in the Light of the Bergsonian Philosophy

This paper by Dr. Bertha Hinkle will appear in The Journal.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

March 12, CLXX, No. 2, pp. 369-404

1 Vaccination Efficiently Performed. E. F. Cody, New Bedford.
2 *Correlations of Cerebrospinal Fluid Examinations with Psychiatric Diagnoses. M. E. Morse, Worcester.
3 Two Cases of Lung Abscess Cured by Operation. W. Whittemore, Boston.
4 Prostatectomy without Irrigation. A. E. Rockey, Portland, Ore.
5 *New Operation for Hip Contractures in Poliomyelitis. R. Soutter, Boston.

2. Correlations of Cerebrospinal Fluid Examinations with Psychiatric Diagnoses.—In reviewing 140 cases Morse found that among eighty patients in whom the diagnosis of paresis was made definitely, or in whom a suspicion of it was entertained, in fifty-seven at the most (71 per cent.) the diagnosis appears to be confirmed after examination of the serum and cerebrospinal fluid. In the sixty cases in which the diagnosis was made definitely, it seems to be substantiated by serologic and cytologic evidence in fifty cases, or 83 per cent.

The cases which have been found most difficult to differentiate from paresis without examination of the serum and cerebrospinal fluid are cerebral syphilis and arteriosclerosis and Korsakow's psychosis. In regard to cerebral syphilis, however, although the findings in the serum and cerebrospinal fluid are supposed to be sufficiently characteristic to permit a differential diagnosis from paresis, in the individual case they frequently leave one in doubt.

In a large insane hospital Morse believes that the routine examination of the serum and cerebrospinal fluid finds, perhaps, its most immediate value in the rapid confirmation or elimination of the suspicion of paresis in new patients and in revision of the diagnoses of certain patients admitted in pre-Wassermann days.

5. New Operation for Hip Contractures in Poliomyelitis.—The following operation has been devised by Soutter: first a longitudinal incision is made 3 inches long, parallel with the long axis of the body, with its middle 2 inches posterior to the anterior superior spine. It is carried down to the fascia. By retracing the subcutaneous tissue the fascia is exposed from the anterior superior spine back to the trochanter. Second, the fascia is incised at right angles to the skin incision, cutting all its fibers transversely from the anterior superior spine back to the great trochanter. Third, the skin incision is next retracted in such a way as to expose the anterior superior spine. By means of an osteotome, the attached muscles and fascia are removed from the anterior superior spine subperiosteally on the inside, on the outside and below; they are all pushed downward.

The hip is hyperextended backward, pulling the tissues down with it. If the tension is great the soft tissues are pushed down by means of gauze or blunt dissector, clearing off the periosteum and soft tissues from that part of the pelvis below the anterior superior spine.

Following the operation a plaster-of-Paris bandage is applied to the whole leg (contractures of the knee and ankle may be corrected first). The hip is hyperextended in order to correct the lumbar lordosis usually present in these cases. It is also adducted slightly to stretch the lateral contractures. The plaster of Paris extends from the nipple line in front and from the lower waist behind to the toes of the foot operated on. A window may be cut in the plaster over the abdomen. The patient is put on a Bradford frame elevated to allow the legs to drop to a lower level than the hips and shoulders. The advantages of this method of procedure are said to be as follows: There is practically no bleeding, the operation does not require much surgical skill and the contracture is definitely relieved. The muscles are not cut across; their periosteal attachment is simply moved 1½ or 2 inches downward. The anterior superior spine will be found to be practically moved downward.

California State Journal of Medicine, San Francisco

March XII, No. 3, pp. 87-128

6 Calculus in Bladder. H. Meyer, San Francisco.
7 Systolic Apical Murmurs. A. H. Dunn, San Diego.
8 *Sources of Error in Blood-Pressure Measurements. E. S. Kilgore, San Francisco.
9 Case of Hemoglobinuric Fever. H. B. Reynolds, Palo Alto.
10 Madelung's Deformity. H. F. Adler, San Francisco.
11 *Closure of Abdomen in Face of Sepsis. J. D. Dameron, Stockton.
12 Intratracheal Anesthesia. S. Pope, San Francisco.
13 Vaccination Against Tuberculosis with Von Ruck Vaccine. F. N. Robinson, Monrovia.
14 Treatment of Gonorrhea in Female. J. C. Spencer, San Francisco.
15 Roentgen-Rays and Mesothorium in Gynecologic Practice. H. J. Kreutzmann, San Francisco.
16 Persistent Conjunctival Hyperemia After Cataract Extraction and Its Cause. P. de Obarrio, San Francisco.
17 Saturation Point of Serum for Normal Lipoids and Cholesterin. C. Quinan, San Francisco.
18 Case of Systemic Blastomycosis. H. P. Hill and E. C. Dickson, San Francisco.
19 *Case of Fatal Veronal Poisoning. E. Swift, Los Angeles.

8. Error in Blood-Pressure Measurements.—The soft tissues of the arm, according to Kilgore, give rise to little if any error in blood-pressure measurements. The resistance of hypertonic arterial walls has a greater influence, and perhaps at times produces large errors, although calcareous arteries may not give rise to appreciable error. A cuff at least 12 cm. wide should be used. Palpation and auscultation systolic readings have simplicity and definiteness to recommend them. Experiments are reported which show the amount of variable error in palpation systolic readings for two observers. Similar experiments are cited to show relation between palpation readings and auscultation readings for systolic pressure. For diastolic pressure determinations Kilgore claims the auscultatory method has the advantages of ease and definiteness of reading. Types of manometers are considered. Mercury instruments should not be used for oscillatory readings.

11. **Closure of Abdomen in Face of Sepsis.**—An incision 3 inches above the pubes is made by Dameron through the right rectus muscle, down to the peritoneum. At this step he has wiped the edges with Harrington iodin and liquor formaldehyd in the hope of preventing infection, but as yet nothing has proved a success. He then opens the peritoneum and if there be free pus, uses hot gauze sponges, wrung from a salt solution, just as hot as they can possibly be borne by a gloved hand, and never uses anything but hot sponges, as they seem to stimulate the bowel and promote the ready removal of the pus and exudate. He then starts in search of a clear field, if possible, and begins to wall off the healthy from the infected by long packs of gauze sponges, 6 inches wide by 3 feet long. The exciting cause is found and removed. The small intestines are handled as little as possible, yet if found agglutinated and suspicious of a pus sac, Dameron thoroughly investigates and if pus be present, treats the sac the same as the primary focus. After all suspicious material has been removed, the abdomen thoroughly cleansed and dried, he sews up as if it were a clean wound.

On the third or fourth day the temperature starts up again. He then removes only one of the sutures in the lower angle of the wound and makes steady pressure from above down. If, he says, necrosis is not sufficient as yet, it will be in the next twelve hours. Dameron now removes all primary dressings and applies hot permanganate stupes and keeps them hot, and has the nurse try to express pus after each dressing daily, and if a suspicious hardening under the skin some distance away from original wound is present, make a free incision into it so as to prevent an extension of the phlegmon.

19. **Fatal Veronal Poisoning.**—Swift's patient had taken 100 grains of veronal just prior to retiring for the night. She died nearly forty-eight hours afterward.

Laryngoscope, St. Louis

February, XXIV, No. 2, pp. 81-160

20 Operative Disposal of Chronic Suppuration of Ear. G. Ferreri, Rome.
21 Pathologic Conditions in Ear, Nose or Throat Reflex to Disease of Teeth, Jaws or Parotid Gland. C. E. Ide, Los Angeles.
22 Squamous Epithelioma of Ear and Mastoid. L. J. Goldbach, Baltimore.
23 Tonsillectomy in Upright Position under Ether. W. H. Roberts, Pasadena, Cal.
24 Hypertrophied Tonsils and Adenoids in Schoolchildren. S. J. Baker, New York.
25 Esophagoscopic Radium Screens. C. Jackson, Pittsburgh, Pa.
26 Improved Mouth-Gag. A. S. and L. D. Green, San Francisco.
27 Results from Use of Normal Horse-Serum in Case of Hemorrhage from Ruptured Esophageal Vein. E. Cobb, Marshalltown, Ia.
28 New Modification of Old Adenotome. A. C. Heath, St. Paul, Minn.

Medical Record, New York

March 14, LXXXV, No. 11, pp. 461-506

29 Extension of Tuberculosis in Immune Lung. G. E. Bushnell, Fort Bayard, N. M.
30 Diagnosis and Treatment of Catarrhal Conditions of Eustachian Tubes and Ears. H. Hays, New York.
31 Adenoma of Prostate. E. Beer, New York.
32 Ten Cases of Acute Perforating Gastric and Duodenal Ulcer. V. F. Marshall, Appleton, Wis.
33 Important Factors in Conservation of Hearing. C. M. Harris, Johnstown, Pa.
34 Five Hundred Examinations of Nose and Throat in an Institution for Delinquent Boys. M. Toeplitz, New York.

New York Medical Journal

March 7, XCIX, No. 10, pp. 461-508

35 *Erosion of Tissues by Aneurysms. A. J. Smith, Philadelphia.
36 *Lingual Tuberculosis-Primary. W. B. Trimble, New York.
37 Soap, Water and Opticians. C. H. May, New York.
38 Low Blood-Pressure. E. E. Cornwall, New York.
39 Food Toxemia or American Gout. R. N. Willson, Philadelphia.
40 Serum Diagnosis J. Diner, New York.
41 Heredity in Exophthalmic Goiter. M. I. Moss, Philadelphia.
42 Special Burette for Use in Rideal-Walker Test. H. W. Mahr, New York.

March 14, XCIX, No. 11, pp. 509-560

43 Diverticulitis of Colon. J. F. Erdmann, New York.
44 *Experimental Study of Tubercle Bacilli Submerged in Water. R. C. Rosenberger, Philadelphia.
45 Gastric Flatulence and Disturbances of Heart. H. Stern and L. B. Sachs, New York.
46 Dyspepsia Due to Chronic Appendicitis. J. J. Gilbride, Philadelphia.
47 *Tobacco Smoking and Mental Efficiency. A. D. Bush, Burlington, Vt.
48 Psychological Pitfalls. H. A. Knox, Ellis Island.
49 Quinin and Urea Hydrochlorid in Nose and Throat Surgery. A. J. Herzig, New York.
50 *Medical Contract Practice. S. A. Tannenbaum, New York.

35. **Erosion of Tissues by Aneurysms.**—In connection with the inflammation, which has been insisted on as an essential preliminary and concomitant of erosion, Smith says there appears in the vicinity of the necrosed part requiring removal more or less concentration of leukocytes and occasionally of other cells of phagocytic power, through whose agency the necrotic substance is carried away in particulate form. From the nature of the whole process, the low grade of the inflammation and the gradual occurrence of the necrosis, he states these are not found present in numbers comparable to the leukocytic infiltrations of acute inflammations. Here one often witnesses, however, the participation of the mononuclear leukocytes in phagocytosis, a phenomenon which has often been denied and which does not take place commonly in acute inflammations. Moreover, among cells bearing particles of necrotic substance one may meet, in addition to polynuclear and mononuclear leukocytes, larger mononuclear cells of endothelioid type and doubtless of endothelial origin.

It is through a series of such changes that the whole process goes forward: an inflammation excited by specific organisms or by mechanical results of stretching of the aneurysmal wall, leading to fixation of the wall to the neighboring tissues; erosion of these bordering tissues by atrophy due to pressure by the sclerosis thus induced and to reduction of blood-supply by the establishment of obliterative sclerosis of the vessels, and by degeneration and necrosis induced by such failure of nutrition, with removal of the necrotic substance by phagocytosis or by absorption after liquefaction. With the loss of tissue in this wise there of necessity exists further weakening of the wall of the sac at the corresponding position, and further dilatation of the aneurysm ensues. Thus with the indefinite continuance of these steps the aneurysm progresses through the tissues as they are destroyed, and eventually, coming to some surface or other structure where further adhesion for support is impossible, ruptures through the remaining degenerate tissues which enclose the blood, and death occurs.

36. **Lingual Tuberculosis.**—Summing up objective observations made in two cases, Trimble states that tuberculous ulcers of the tongue have the following diagnostic points: they usually affect the free border near the tip; the dorsum is generally free; they are as a rule superficial; the base is generally a dirty yellow, dotted here and there with minute whitish specks, which probably represent small areas of caseation necrosis; the ulcer may be oval or gyrate, but the borders are generally sharply defined against the healthy tissues, sloping and not undermined; the lesions are not indurated and the neighboring glands are very slightly affected.

The histopathologic examination alone is practically useless as a means of diagnosis between syphilis and tuberculosis, but it is of great aid in excluding cancer. The majority of tuberculous ulcers of the tongue, he says, are, in all likelihood, secondary; it is easy to prove that an ulcer is secondary, but to prove that it is primary is quite another matter.

44. **Experimental Study of Tubercle Bacilli Submerged in Water.**—The enormous number of persons suffering from tuberculous infection, and the countless number of bacilli discharged daily by those patients directly into the sewage systems of the city, or into a stream or tributary of some large

river, led Rosenberger to investigate the vitality (?) and virulence of tubercle bacilli in water mixed with a small quantity of feces and urine.

These studies show that there is danger and very great danger in the careless disposal of the feces of tuberculous individuals. It seems proved beyond any doubt that the tubercle bacillus when discharged into water is not only capable of existing for a very long time, but of retaining its virulence. Therefore, Rosenberger emphasizes the fact that the most important point is insistence on the complete disinfection of the feces of a tuberculous subject, as well as of the sputum and urine, with a powerful germicidal agent. He urges (1) more rigid inspection and examination of dairy cattle for the detection of tuberculosis, and the presence of tubercle bacilli in milk and feces of apparently healthy animals. (2) The water-supply of a village, town or city should be safeguarded principally by (*a*) the prohibition of dumping sludge in streams; (*b*) the proper filtration of water; (*c*) where there are no facilities for filtration, recommending the boiling of water for drinking purposes; (*d*) the rigid inspection of drainage of sanatoriums for the care of tuberculous subjects; (*e*) the prohibition of dumping slaughter-house refuse into streams. (3) Pasteurization of milk for infant-feeding, or the general heating of this food for twenty minutes at 60 C. for the destruction of tubercle bacilli and other toxicogenic bacteria and products. (4) Sludge retained in septic tanks should not be used for fertilizer unless sterilized. Instead of allowing sludge to accumulate for several months before cleaning the tanks, these receptacles should be cleaned at regular stated intervals, say once a month, and the sediment then sterilized; or collected, dried and incinerated. (5) The cremation of those dead from tuberculosis because of the great vitality and resistance of the tubercle bacillus.

47. **Tobacco Smoking and Mental Efficiency.**—A test made by Bush on each of fifteen men, in several different psychic fields, showed that tobacco smoking produces a 10.5 per cent. decrease in mental efficiency. The greatest actual loss was in the field of imagery, 22 per cent. The three greatest losses were in the fields of imagery, perception and association. The greatest loss, in these experiments, occurred with cigarettes. Nicotine was found in the distillates of all tobaccos tested. Nicotine was not found in the smoke of any tobacco, except that of cigarettes, and then only in traces. Pyridine was found in the smoke of all tobaccos tested. Pyridine seemed to be the principal toxic factor in the smoke.

50. **Medical Contract Practice.**—The measures to which Tannenbaum believes we should direct our efforts in combating the evils resulting from cheap contract practice are: publicity, unionization of physicians, correction of abuse of charities, the secret division of fees should be made a misdemeanor punishable by fine and (or) temporary suspension from the practice of medicine. The attending physician should be entitled to extra compensation for engaging in a consultation or cooperating with a surgeon. Consultant's fees should be fixed and easily ascertainable. Physicians of moderate means should consult more with one another instead of calling in the physicians of the plutocracy.

Every physician should be permitted to advertise his specialty on his sign and on his stationery and to publish his card in a newspaper. This would make the specialist independent of commission-seeking confrères. Hospitals, like dispensaries, should be public institutions, and any properly qualified physician should have the right to take a patient into a hospital and treat him there. The health of the community should be the business of the community. Physicians should be public servants just as policemen, firemen, letter-carriers, street-cleaners, judges and schoolteachers are.

Oklahoma State Medical Association Journal, Muskogee

March VI, No. 10, pp. 415-450

51 Treatment of Fractures of Neck of Femur. R. L. Hull, Oklahoma City.
52 Diagnosis and Treatment of Fractures. I. W. Robertson, Dustin.
53 Study of Fifty Cases of Pyosalpinx. W. E. Dicken, Oklahoma City.
54 Orbital Cellulitis. M. K. Thompson, Muskogee.

Southern Medical Journal, Nashville

March, VII, No. 3, pp. 175-254

55 *Milk in Its Relation to Infant Mortality. H. E. Tuley, Louisville, Ky.
56 Importance of Regulated Rest and Play for School Children. J. D. Love, Jacksonville, Fla.
57 Importance of Medical Inspection of Schools. P. F. Barbour, Louisville, Ky.
58 Importance of Pediatrics as Special Study. L. E. La Fetra, New York.
59 Medical Inspection of Children in Rural Schools. W. M. Jones, Greensboro, N. C.
60 Observations on Anxiety Neurosis. S. T. Rucker, Memphis.
61 Commonest Natural Causes of Sudden Death. D. I. Macht, Baltimore.
62 Recent Surgery of Cranial Nerves for Relief of Headaches. H. H. Martin, Savannah, Ga.
63 *Evolution of Treatment of Ectopic Pregnancy. S. McGuire, Richmond, Va.
64 *Osteogenetic Function of Periosteum and Bone Transplants. I. Cohn and G. Mann, New Orleans.
65 *Pulmonary Embolism as Surgical Complication. J. H. Blackburn, Bowling Green, Ky.
66 Local and Venous Anesthesia. G. F. Bicknell, Tampa, Fla.
67 Bacterin Therapy in Diseases of Skin. H. H. Hazen, Washington, D. C.

55, 63. Abstracted in THE JOURNAL, Dec. 20, 1913, pp. 2269 and 2270.

64. **Osteogenetic Function of Periosteum.**—As a result of their experimental work, Cohn and Mann are led to conclude that: (1) Periosteum does not always reproduce bone; in fact, they have never been able to show the existence of an osteogenetic function in the periosteum. (2) Periosteum is not absolutely necessary for bone growth or repair. (3) Small free bone transplants, free of periosteum and individual blood-supply, may grow. (4) The periosteum may be considered as a limiting membrane.

65. **Pulmonary Embolism as Surgical Complication.**—Blackburn is of the opinion that pulmonary embolism secondary to venous thrombosis is a relatively frequent complication in general surgical and puerperal cases, as well as after operations. There is, he says, no specific cause in all cases, but, as a rule, it develops as the result of a combination of trauma and certain blood-changes, either of a chemical nature or from bacterial invasion. Even with the most careful preparation, operative procedures and after-treatment there will doubtless be a certain number of cases of thrombosis with the secondary development of embolism. Blackburn cites six cases.

Surgery, Gynecology and Obstetrics, Chicago

March, XVIII, No. 3, pp. 273-332

68 *Thirteen Years' Experience with Pyloroplasty. J. M. T. Finney and J. Friedenwald, Baltimore.
69 *Epithelial Hyperplasia in Breast. W. C. MacCarty, Rochester, Minn.
70 *Operations for Cancer of Breast. E. S. Judd and W. E. Sistrunk, Rochester, Minn.
71 *Gastric Hemorrhage. J. B. Deaver, Philadelphia.
72 *Etiology and Bacteriology of Leukorrhea. A. H. Curtis, Chicago.
73 *Abscess of Testicle. J. D. Barney, Boston.
74 Congenital Lymphangiectatic Elephantiasis. F. A. Besley, Chicago.
75 *Free Transplantation of Fascia. E. M. Von Eberts and W. H. P. Hill, Montreal.
76 *Summing Up of Goiter Question. C. H. Mayo, Rochester, Minn.
77 Rubber Tube in Reconstruction of Obliterated Bile-Duct. A. T. Mann, Minneapolis.
78 Conservative Surgery of Testicle. G. MacGowan, Los Angeles.
79 *Uses of Fat in Surgery. J. F. Binnie, Kansas City, Mo.
80 *Relation of Ductless Glands to Surgery. R. Park, Buffalo.
81 Spastic Tumor of Pyloric Canal; Other Spastic Conditions of Stomach. W. Lerche, St. Paul, Minn.
82 Simple Apparatus (Rubber Bulb) for Transfusion by Aspiration Injection Method. B. F. McGrath, Rochester, Minn.
83 Technic of Closing Abdominal Incision. H. F. Kane, Washington, D. C.
84 Scalpel Surgery of Tumors of Bladder. G. S. Peterkin, Seattle, Wash.
85 Blocking of Infra-Orbital and Mental Nerves at Their Foramina to Induce Operative Anesthesia in Their Cutaneous Distribution. P. G. Skillern, Jr., Philadelphia.
86 Labor in Cases with Relatively Contracted Pelves. N. M. Garrett, Frankfort, Ky.

68. **Experience with Pyloroplasty.**—From observations of a study of 100 cases of pyloroplasty, Finney and Friedenwald believe they are justified in drawing the following conclusions: The operation has its greatest indication in the relief of pyloric stenosis due to chronic ulcers, situated at or near the pylorus, and on either side of it, or resulting from cicatricial

contraction following the healing of such ulcers. It is often a useful procedure in cases of hemorrhage due to gastric ulcers on the lesser curvature, or to duodenal ulcers which cannot be controlled medically, and which threaten the life of the patient, as well as in the chronic dyspepsias due to ulcers which have not been relieved by medical treatment.

The operation has certain advantages over gastro-enterostomy and but few of its disadvantages. Such objections as are urged against the operation, e. g., its inapplicability in the presence of adhesions surrounding the pylorus, as well as in the presence of active and bleeding ulcers, and also because of the fact that the new opening is not at its lowest point, taking advantage of gravity, are according to their experience more fanciful than real, since the operation has frequently been performed under these conditions with most gratifying results. The interesting experimental work of Cannon and Blake and others supports this contention.

The only contra-indications to the operation are inability to mobilize the duodenum when adhesions are too dense, and thickening and infiltration about the pylorus due to hypertrophic forms of ulceration. These conditions, however, in their experience occur but rarely. In atony or gastroptosis with slight motor insufficiency, such as is observed in the water-trap stomach; or in nervous dyspepsia, i. e., in gastric disturbances not dependent on organic disease, this operation is contra-indicated.

The special advantages of this operative procedure lie in its affording the opportunity to excise all ulcers in the anterior walls of the stomach or duodenum after direct inspection of the part affected; also the application of treatment to ulcers situated in the posterior walls. It does not greatly disturb the normal relation between the stomach and intestines as in the case of other operations. The immediate as well as the final results are most encouraging. While in some instances partial gastrectomy or gastro-enterostomy is undoubtedly the operation of choice, nevertheless, on account of its simplicity and because of its satisfactory end results, the authors believe that pyloroplasty will continue to retain its position as a safe and useful procedure.

69. Abstracted in THE JOURNAL, January 31, p. 404.

70. Abstracted in THE JOURNAL, February 7, p. 485.

71. Abstracted in THE JOURNAL, Nov. 22, 1913, p. 1928.

72. **Bacteriology of Leukorrhea.**—Curtis' views of leukorrhea may be summarized as follows: The uterine cavity tends to remain free from bacteria in cases of leukorrheal infection. but mucus secretion from the cervix may promote the development of purulent discharges. The usual seat of formation of purulent discharges is the lower genital tract. In unmarried women gonorrheal infection precedes the development of chronic leukorrhea in the majority of instances. A chief part played by the gonococcus consists in preparing the soil for other organisms. The great contingent of leukorrheal bacteria consists of anaerobes, of which Gram-negative bacilli form a large proportion. It is highly probable that these bacteria play an active part in the production and maintenance of leukorrhea. Common aerobic organisms, such as *B. coli* and staphylococci, seem to be of minor importance.

73. **Abscess of Testicle.**—The testicle is protected from infection by its tunica albuginea on the one hand, and by its rich blood- and lymph-supply on the other. Arguing from an embryologic viewpoint, the testicle, like the kidney, may be regarded as an excretory organ. As blood-borne organisms reach the epididymis and testicle with equal freedom and frequency, it would appear to Barney that the latter has a selective function, rejecting certain organisms and harboring others. Most of the testicular infections are hematogenous. A few probably are lymphatic in origin. Infection of the testicle resulting in abscess and without epididymal involvement is exceedingly rare.

75. **Free Transplantation of Fascia.**—The work reported on by the authors consisted in the transplantation of a segment of fascia lata from one dog to an artificially prepared defect in either the tendo Achillis, the dura mater, or the peritoneum of the same dog.

Twenty-six operations in all were done, and they are described here in three groups. The authors call attention to the following points: After the field to which the graft is to be transferred has been prepared, a curved incision with convexity forward is made on the postero-external aspect of the lower third of the thigh and the necessary amount of fascia stripped from the underlying muscles. This is then transferred quickly and sutured into position. The raising of the fascial flap should be effected without scoring or other injury to its inner or muscular surface. The muscular surface of the transplant should be turned outward, since under normal conditions this surface glides over the muscles and shows less tendency to form adhesions than does the outer surface—a factor of especial importance in the repair of tendons. After the main operation is completed, the wound in the thigh is closed with skin sutures. No attempt is made to obliterate the fascial defect, partly because in most cases it is impossible to do so, and also because experience has shown that the presence of such a defect is in no way detrimental to the function of the underlying muscles.

Fascial grafts heal without reaction and without appreciable diminution in size, the two requisites being, of course, the avoidance of unnecessary mechanical injury to the tissues and the observance of a strictly aseptic technic. Failure owing to infection is naturally more likely to occur in non-aseptic cases, but even in such cases, in which defects in the intestinal canal, the urinary passages, and the trachea, have been repaired, and in one case of ectopia vesicae in which a large area of the transplanted fascia necessarily remained exposed, prompt healing has occurred.

76, 80. Abstracted in THE JOURNAL, Nov. 29, 1913, p. 2011.

79. **Uses of Fat in Surgery.**—Binnie suggests that after myomectomy the sutured uterine wound may be covered with a plaster consisting of a free flap of omentum held in place by a few stitches. This graft aids in preventing any oozing of blood. The omental grafts placed over intestinal wounds to prevent leakage of intestinal contents are methods of peritonealization and depend for their value entirely on their fibrous tissue constituents and peritoneal covering and not at all on their fat contents; in fact, a very fat omentum, while desirable as a plug for liver wounds, is entirely unsuited to act as a plaster over an intestinal wound.

The same is true for a procedure devised by Binnie where he tied a free flap of omentum around the pylorus to permanently obstruct it after a gastro-enterostomy had been performed. It has appeared to Binnie that where a cavity is left in the brain after removal of a tumor or evacuation of a cyst, if the cavity does not quickly disappear through cerebral expansion possibly a plug of fat might be a suitable tampon. The specific gravity of fat is somewhat less than that of cerebrospinal fluid. Binnie has had only one opportunity to try the method, and that was in a case of internal hydrocephalus following an old and severe trauma where. during operation, the ventricle was opened under the impression it was a cyst. Failure was a foregone conclusion.

Many otherwise beautiful faces are deformed by the presence of depressed scars adherent to underlying bone. Sometimes, Binnie says, such scars may be neatly excised with gratifying results, but sometimes such treatment is unsuitable or fails. Subcutaneous division of the adhesion between the skin and the bone may do good, but it does not replace the tissues the loss of which was the cause of the depression. If through a suitable incision the adhesions are thoroughly divided, and if then (after hemostasis is attained by pressure) a suitable mass of fat is gently insinuated through the cut to fill up the depressed area an ideal result may be obtained. It is best to obtain the fat for transplantation from the patient himself (autoplasty), as homoplasty is not quite so successful and heteroplasty commonly fails.

After excising the breast for non-malignant disease it is occasionally of considerable importance to reproduce an esthetic swelling at the site of the mamma. For this purpose fat may be transplanted. When disease has been chiseled out of a bone, recovery is very slow unless the cavity left in the bone is obliterated as by the implantation of non-pedunculated masses of fat. When a bony ankylosis has been divided and the articular ends of the affected bones have been properly modeled, their reunion may be prevented and a new joint may be obtained by interposing living soft tissues between them. After tenorrhaphy or neurorrhaphy it is very important to prevent the line of union from becoming closely adherent to neighboring structures. There is no better prophylactic measure than wrapping a free or pedunculated flap of fat around the part to be protected. In pulmonary tuberculosis and in bronchiectasis various operations have been devised to put the lung at rest and to cause any pulmonary cavities to collapse. Tuffier has successfully grafted voluminous masses of fat between the mobilized parietal pleura and the ribs in bronchiectasis.

Wisconsin Medical Journal, Milwaukee

February, XII, No. 9, pp. 281-306

87 Clinical Value of Stool Examinations. A. H. Sanford, Rochester, Minn.
88 Ossified Stylo-Hyoid Ligament. W. E. Grove, Milwaukee.
89 Degenerate Girl. C. A. Frost, Chippewa Falls.
90 Ethics in Practice of Medicine. H. P. Bowen, Johnson Creek.
91 Improved Tonsil Snare Tip. R. U. Cairns, River Falls.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

November, XXXVI, No. 2, pp. 119-269

1 Researches on Corpus Callosum. C. T. Van Valkenburg.
2 *Sensory Changes in Friedreich's Disease. P. W. Saunders.
3 *Wassermann Reaction and Its Application to Neuriatry. P. Fildes and J. McIntosh.
4 The Bulbar Nuclei, with Special Reference to Existence of Salivary Center in Man. A. Felling.

2. Sensory Changes in Friedreich's Disease.—The sensory disturbances found in twenty typical cases of Friedreich's disease, in all stages, examined by Saunders were as follows: The appreciation of touch, pain and temperature were very irregularly affected in the upper extremities, never more than very slightly and often not at all. When loss occurred it was almost always a slight distal blunting to touch, and very rarely to pin-prick, or to heat and cold as well. In the lower extremities these cutaneous elements were more frequently involved, and there was often some distal hypo-esthesia to light touch, or even to pressure-touch, and in many cases also to pin-prick and to heat and cold.

It was the other elements of sensation, however, chiefly those that are commonly included in the term "deep sensibility," but also the appreciation of simultaneous contacts, and of size, shape and form, that were most severely affected. The sense of position and the recognition of passive movement, the appreciation of double contacts and of vibration were almost always more or less affected, especially in the distal parts of the lower limbs, and not infrequently, though to a less degree, in the upper limbs, as well. The frequency and the constancy with which these elements of sensation were disturbed was characteristic of the disease.

The recognition of shape and form, and the appreciation of size and weight were also affected, but much less frequently and less seriously than the sense of position, the appreciation of compass-points, or of vibration. This, Saunders believes, was probably due to the fact that these forms of sensibility can be examined in the upper extremities only where the sensory loss as a whole in the early stages of the disease is usually not great, and possibly also to the fact that they are more elaborate forms of sensibility. They would seem, however, to be associated in their disturbance rather with the loss of the sense of position, the appreciation of double contacts and of vibration than with tactile loss. The recognition of shape, and that of size and of weight were affected with the same frequency, and usually in the same patients, while the recognition of form is less often disturbed.

The elements of sensibility, therefore, which it is assumed are conducted through the dorsal columns of the cord, would seem to be disturbed in Friedreich's disease more or less constantly and characteristically. The loss, especially in the early stages of the disease, falls most heavily on the lower extremities, that is, on the regions innervated by the spinal segments that are earliest affected, and tends to spread higher and higher over the body and to become more profound as the disease advances.

In a disease such as Friedreich's ataxy, where there is a very slow progressive degeneration of the dorsal columns of the cord, Saunders points out that it is inevitable that though the sensory loss may conform to a definite type, there must be much variability in the relative intensity of the affection of the different elements of sensibility in different cases. The frequency, however, with which a characteristic sensory loss does occur would seem to justify its inclusion in the clinical picture of the disease as an integral, not as an exceptional, feature; and further, the constancy and regularity with which this loss involves the sensory impulses assigned to the dorsal columns of the cord goes to confirm the conclusions regarding sensory conduction in the cord that have been obtained by the clinical and anatomical study of local spinal lesions.

3. Wassermann Reaction and Its Application to Neurology.—This subject is discussed at great length by the authors, who studied 91 cases. The following general conclusions are drawn: In general diagnostic work, exclusive of nervous conditions, a positive reaction is so constant in active syphilis that such a diagnosis, made in the face of a negative result, will require very special support on other grounds before it can be considered probable. A positive reaction in the cerebrospinal fluid indicates a syphilitic lesion of the central nervous system. In active untreated cases of dementia paralytica, tabes dorsalis and cerebrospinal syphilis, the reaction is positive both in the serum and cerebrospinal fluid. In cerebral syphilis, without involvement of the spinal cord, the cerebrospinal fluid is usually negative. Except in the latter cases the strength of the reaction has no certain diagnostic value.

The reaction is apt to be negative in the cerebrospinal fluid in cases of hemiplegia, non-progressive tabes dorsalis and old lesions of the nervous system, especially in cases of stationary congenital syphilis. It is also usually negative in the serum particularly in very recent nerve lesions of the late secondary period, and in the cerebrospinal fluid particularly in treated cerebrospinal cases. The occurrence of a positive reaction in one of the test fluids when the other is negative is so common that a reaction found negative in one fluid only is insufficient to exclude syphilis.

Pure "parasyphilitic" lesions do not respond satisfactorily to treatment as shown by the slight effect on the reaction in the cerebrospinal fluid. Cerebrospinal lesions react very readily to treatment. The celerity with which the reaction in the cerebrospinal fluid responds to treatment is an index of the "parasyphilitic" or "syphilitic" nature of the case. The positive reaction in the serum is rapidly made negative by treatment in acute syphilis, but in chronic syphilis this effect is produced very slowly. In the cerebrospinal fluid, on the other hand, the rate of reduction of the reaction does not depend on the duration of the infection. Thus, in gummatous lesions of the central nervous system, as also in acute secondary cerebrospinal syphilis, the effect of treatment on the reaction in the cerebrospinal fluid is rapid. The "provocative" injection of salvarsan for the purpose of exciting an exacerbation of the reaction has some, but probably an exaggerated, diagnostic value.

Dublin Journal of Medical Science

February, III, No. 506, pp. 81-160

5 Chronic Intestinal Stasis. S. Pringle.
6 Origin of Some of the Hospitals of Dublin. T. P. Kirkpatrick.
7 Admission to Westmoreland Lock Hospital, Dublin, Since the Year 1860. G. P. Meldon.

Indian Medical Gazette, Calcutta

February, XLIX, No. 1, pp. 41-84

8 Gleanings from Calcutta Post-Mortem Records. L. Rogers.
9 Venereal Disease in Army of Indian Empire. P. Hehir.
10 Asino-Vaccine. W. C. Hossack.
11 Use and Abuse of Pessaries. V. B. Green-Armytage.
12 Night-Blindness. P. K. Chitale.
13 How to Keep Flies off Edible Articles for Sale. C. C. Murison.
14 Case of Salvarsan Poisoning. K. G. Pandalai.
15 Case of Transient Hemiplegia. L. Fink.

Journal of State Medicine, London

March, XXVII, No. 3, pp. 129-192

16 Sexual Disease and Individual. A. C. Smith.
17 Mentally Defective Children and Their Treatment. E. Sayer.

Journal of Tropical Medicine and Hygiene, London

February 10, XVII, No. 4, pp. 49-64

18 Culture of Leishmania from Finger Blood of Case of Indian Kala-Azar. C. M. Wenyon.

Lancet, London

February 21, I, No. 4721, pp. 513-586

19 Experimental Principles of Operative Treatment of Fractures and Their Clinical Application. E. W. H. Groves.
20 Thyreoglossal Tract. W. G. Spencer.
21 *Primary Carcinoma of First Part of Duodenum with Secondary Involvement of Common Bile-Duct. J. P. Bibby and M. J. Stewart.
22 *Methods of Increasing Accuracy and Delicacy of Wassermann Reaction. F. H. Thiele and D. Embleton.
23 *Decompression of Brain in Intracranial Hemorrhage. L. B. Rawling.

February 28, I, No. 4722, pp. 587-658

24 Infantilism. H. Gilford.
25 Morbid Anatomy of Tuberculosis in Man. (To be concluded.) T. Shennan.
26 *Comparison of Actions of Chloroform and Ether on Blood-Pressure. H. P. Fairlie.
27 Case of Chronic Joint Lesions in Hemophilia. D. W. C. Jones.
28 Three Cases of Eczematous Dermatitis Produced by Poisonous Plants. A. Whitfield.
29 *Fate of Plug of Iodoform Gauze Accidentally Left in Abdomen. A. E. Maylard.

21. **Primary Carcinoma of Duodenum.**—On laying open the intestine a tumor was found by Bibby and Stewart in the first part of the duodenum, commencing 1½ inches from the pylorus and extending along the gut for a distance of about 2 inches. The growth was 3 inches in length, and almost completely encircled the viscus, leaving only ½ inch of the anterior wall uninvolved. It was ulcerated in the center, while the rest of the surface presented a honeycombed necrotic appearance, save at the extreme margin. The bile papilla and opening of the common duct were situated about an inch below the tumor, and appeared normal. Between the papilla and the lower margin of the growth and immediately abutting on the latter, there was a diverticulum about ¾ inch in depth, and just wide enough to admit the tip of the little finger. The common duct, where it lay in relation to the duodenal tumor, that is, about an inch below the junction of the cystic and hepatic ducts, was itself the seat of an annular new growth completely encircling the lumen, and apparently directly continuous on its deep aspect with the duodenal growth.

Above the tumor there was marked dilatation of all the bile passages, gall-bladder, common duct, cystic and hepatic ducts, but that the obstruction was anatomically incomplete was shown by the ease with which a probe could be passed through the stenosed portion of the tube, and so through the remaining portion of the common duct to the intestine. The dilated bile passages, both intra- and extrahepatic, were filled with a thin, slightly bile-stained, mucoid fluid, while their walls presented a curiously pitted appearance. The liver on section was soft and fatty looking, and showed a considerable degree of bile-staining, especially around the dilated hepatic ducts. There were several secondary deposits of new growth, of which the largest, about the size of a hazel-nut, was necrotic and bile-stained in the center. The pancreas presented no evidence of new growth, but several of the lymph-nodes in relation to it were the seat of secondary deposits.

From the pathologic standpoint the chief problem for solution was, which was the primary growth—that in the duodenum or that in the common duct? After careful consideration the authors came to the conclusion that the duodenal tumor was the primary, and for the following reasons: (1) The gastric symptoms were of three months' standing, whereas the jaundice had only been in existence one month. (2) The type of tumor was very suggestive of a carcinoma of bowel origin. (3) There were secondary deposits in the liver and lymph-nodes, an event which occurs more frequently and earlier in duodenal cancers than in those of common duct origin. (4) The duodenal tumor was more extensive and the seat of more advanced degenerative changes than the common duct growth.

22. **Increasing Accuracy of Wassermann Reaction.**—The author's method of increasing the delicacy of the reaction is: (1) To diminish the amount of complement used to 1½ times, only, that which will cause complete hemolysis of the system adopted. (2) To use large amounts, half a cubic centimeter or more, of inactivated syphilitic serum. (3) To use 50 to 100 units of the antigen. By this method purely anticomplementary phenomena do not play a part. Anticomplementary effects being rendered obvious in the control, true complement fixation, even when minimal, can be readily demonstrated. In this way cases which would otherwise give a slight reaction, so slight as to be doubtful in the ordinary reaction, give a full fixation; cases which otherwise give a negative can be made to give a full reaction, thus bringing in a large number of latent cases; and no fallacious results with other diseases have been obtained.

23. **Decompression of Brain in Intracranial Hemorrhage.**—Lumbar puncture, in Rawling's opinion, is utterly useless for the relief of compression, which is dependent on intracranial injuries, though repeated time after time. In addition there is a positive danger that the sudden escape of cerebrospinal fluid and blood may lead to the medulla being forced down into and "corked up" in the foramen magnum, with immediate disastrous results. Such an accident not infrequently happens when *lumbar puncture* is *carried out for* neoplasms of the brain, and Rawling has seen the same disaster occur in traumatic cases. On the other hand, he considers that considerable benefit may be derived from venesection, both in mild cases of compression when carried out alone, and in the more serious cases when utilized in conjunction with decompression operations. The benefits derived are in all probability dependent on the reduction of the intracranial venous pressure and the consequent diminution of the degree of cerebral edema.

Some decompression operation being decided on, what is the best method? There are two chief operations, cerebellar decompression and subtemporal decompression. In comparing the relative advantages and disadvantages of these two methods, Rawling emphasizes that it is necessary to take into consideration the critical condition of the patient, and Rawling thinks that the method chosen should fall into line with the following desirable features: Insomuch as the vital centers are in a most unstable position, more especially the respiratory center, which almost invariably gives out first, the operative position should be one in which there is as little disturbance of respiratory function as is possible. In other words, it is of importance that the patient should be on his back.

The site chosen for the operation should be a convenient one for the surgeon, so that the attack can be carried out deliberately. Hemorrhage should be capable of control during the operation. The sudden loss of any quantity of blood will imperil the action of the vagus and vasomotor centers, both of which are in a position of considerable instability. An area should be chosen where the skull is thin, so that the trephining and enlargement of the gap may be carried out expeditiously and with the least disturbance to the patient. The area attacked should be a "likely" area, one where hemorrhage in relation to the membranes or where brain laceration is likely to be found. The region of brain exposed should be a "silent" area, for the sudden relief of intracranial pressure may lead to such protrusion of the brain that disastrous results will ensue in the event of the motor area or cerebellum being involved. The relief of intracranial pressure should be gradual in character, not sudden and violent.

Taking these factors into consideration with respect to cerebellar decompression, Rawling says it is clear that this particular method is lacking in many essentials. Admittedly, the operation is conducted in close relation to the medullary centers, with proportionate pressure relief, but the relief is too drastic. Again, the position required for the operation is bad for the patient and most inconvenient for the surgeon. Respiratory failure is always to be feared in cerebellar operations, and hemorrhage may be profuse and difficult of control. Altogether this operation is not commended. On the other hand, subtemporal decompression fulfils all the requirements of a satisfactory decompression.

26. Comparison of Actions of Chloroform and Ether on Blood-Pressure.—Fairlie sums up the effects of the two anesthetics on the blood-pressure as follows: (*a*) Chloroform.—A fall of pressure is produced throughout the administration of chloroform. With the establishment of full anesthesia this fall amounts to at least 10 mm. and sometimes considerably more; along with the slower pulse beats, a varying degree of pallor is present. Surgical shock during chloroform anesthesia produces a slight further fall of pressure. With the withdrawal of those two depressants—chloroform and shock—the blood-pressure exhibits a tendency to rises rapidly, and very often soon reaches a point a few millimeters below the patient's normal.

(*b*) Ether.—Little alteration of the blood-pressure is produced by ether. It may cause a rise, it may maintain a constant level, or it may cause a fall. It causes more rapid and more forcible cardiac action, with dilatation of the smaller vessels (as evidenced by the flushing which occurs), the latter probably counteracting the former in maintaining the blood-pressure level almost constant. With intercurrent shock a considerable fall of pressure takes place, a fall almost equal to the combined effects of chloroform and shock. The subsequent recovery after severe shock is slow, some time elapsing before the blood-pressure approaches the normal level.

In all cases of slight surgical shock chloroform causes considerable lowering of the blood-pressure, whereas, in this class of cases, there is but little lowering of the blood-pressure under ether. With the latter anesthetic, therefore, the margin of safety is greater than with the former. In this class ether is the anesthetic of choice.

In cases of severe surgical shock, at the end of an operation the blood-pressure shows more tendency to reaction with chloroform than with ether; there is more decided and better maintained rise with the former. At a time when it is of vital importance that patients should be able to make use of all their resources, they are better able to do so after chloroform anesthesia than after ether.

After weighing up all those considerations Fairlie thinks that, in the second class, chloroform is the anesthetic to be chosen; the induction of anesthesia, however, being effected by means of ether.

28. Fate of Iodoform Gauze Accidentally Left in Abdomen.—At operation for stone in the ampulla of Vater a long strip of iodoform gauze was conducted down to the sutured wound in the ampulla and led out of the parietal wound. The wound healed and the patient left the infirmary well. A fortnight later, she began to be troubled with a "soreness in the right side and a feeling of fulness in the stomach." The symptoms which gradually developed were all suggestive of pyloric obstruction, due to adhesions. The abdomen was opened with the object of performing the usual no-loop operation of posterior gastrojejunostomy.

On pulling up the first part of the jejunum for anastomosis with the stomach, the bowel was found greatly increased in size, and its walls greatly thickened and congested. An indefinite feeling of something within the canal was felt. The pyloric aperture was widely dilated, as was also the first part of the duodenum. On opening the jejunum a foreign substance was at once seen which, when withdrawn, proved to be a piece of gauze about 15 inches in length. One part of the elongated mass passed up into the duodenum, while the other extended down the bowel. The upper end presented a large knob-like appearance somewhat whitish in color and practically devoid of smell; the lower was brownish in color and fecal in odor. The patient made a complete recovery and left the institution well.

The piece of iodoform gauze used at the second operation led down to the sutured incision in the ampulla of Vater. During the subsequent dressings of the case the question was once raised regarding the removal of the plug. Neither dressers or nurses had seen it; and as no indication of its presence [illegible] in the wound it was taken for granted that it must have been unknowingly drawn out during one of the removal [illegible] the outer dressings to which it had become adherent. [illegible] that the subsequent fate of the plug must have been [illegible] that, by pressure, it had ulcerated into the second portion of the duodenum; and once admitted it had merely been carried on through by the normal peristalsis of the bowel. Although its removal was easy, it had led to [illegible] and partial obstruction of the canal.

Annales de Médecine et Chirurgie Infantiles, Paris

[illegible] 15, XVIII, No. 4, pp. 105-140

30 *Appendicitis in Children. V. Veau
31 *Acute Nephritis in Children. (Nature bacillaire de certaines [illegible] de l'enfance considérées comme "primi[illegible] de la réaction de l'antigène.) R. Debré and [illegible] Paraf.
32 *Hygiene for Nursing Women. P. Nobécourt
33 [illegible] and Eruptive Diseases. F. de Courmelles.

30. Appendicitis in Children.—Summarized in these columns March [illegible]

31. Acute Nephritis in Children.—Debré and Paraf report four cases of apparently primary acute nephritis in children 4 to 11 [illegible] composition of the urine, and all the features belonging to ordinary nephritis, but the deviation of complement test for tuberculosis gave constantly positive findings with the urine from the affected kidney and negative findings with the urine from its sound mate. Inoculation of guinea-pigs [illegible] positive responses in each case, the animal [illegible] tuberculosis. There was no deviation of complement [illegible] the urine from persons with pulmonary tuberculosis [illegible], without involvement of the urinary apparatus, in their experience. In the above four cases the response to the deviation of complement test became negative as the [illegible] healed or subsided into a torpid, chronic stage. The children all recovered, apparently completely, except that one still has slight albuminuria.

32. Hygiene for Nursing Women.—In the course of this class-lecture, Nobécourt emphasized that the best of all means for increasing the flow of milk is the mechanical effect of the child's sucking at the breast. Also that the woman should live according to the strictest rules of hygiene, both general and local, but even then, there may be some special intolerance on the part of the child for breast milk, some inherited taint which interferes with the normal assimilation of even the best breast milk. With congenital intolerance the digestive disturbances generally commence early; Bar has reported the case of a child who became very pale each time after nursing and had at once a dark green, blood-stained passage. This occurred with the mother's milk and with three wet-nurses. The congenital intolerance may be an actual anaphylaxis or an idiosyncrasy or the result of a neuropathic predisposition. The acquired intolerance may be traced to defective diet in the nursing woman; Nobécourt has noticed in the hospital infant wards that the babies all have green diarrhea the day in the week on which cabbage is served to the nursing women. Abuse of chocolate may also affect the infant injuriously; Brandeis found numerous oxalate crystals in the milk of a woman who took excessive amounts of chocolate. As a rule, however, the defective diet on the part of the nursing woman acts indirectly by inducing constipation or diarrhea.

Archives Internationales de Chirurgie, Ghent

VI, No. 3, pp. 255-366. Last indexed Nov. 8, 1913, p. 1753

34 *The Behavior of the Parathyroid Glands with Ordinary and Exophthalmic Goiter. T. Iversen.
35 Congenital Varices of the Legs; Two Cases. A. Zancani.

34. The Parathyroid Glands with Disease of the Thyroid.—Iversen's long article is accompanied by a bibliography of 498 references, filling sixteen pages, and twenty plates showing the thyroid from two or more points of view and the special features of the parathyroids. The article is concluded from the preceding number, and fills a total of 128 pages. It is based on the operative or necropsy findings in 25 cases of goiter and in examination of specimens after an operation in 18 cases. His exophthalmic goiter material includes 3 operative cases, 2 necropsies and 30 specimens examined after removal. The results of this research all testify to the superiority of Kocher's enucleation-resection technic as permitting the removal of the thyroid as needed without injuring the parathyroids, and because it obviates the necessity for ligating the main trunk of the inferior thyroid artery. Iversen's findings also confirm the importance of the parathyroid glands as independent organs with a vital and indispensable function. He found in 96 normal cases that there were only two parathyroids in 2 per cent., three in 9 per cent., four in 81 per cent. and five in 7 per cent. They averaged 2 by 4 by 6 mm. and were located at the rear margin of the lower pole of the thyroid, close to the branches of the artery and the recurrent nerve. With goiter, he found two parathyroids in 4 per cent., three in 36 per cent., four in 56 per cent. and five in 4 per cent. In 4 out of 5 exophthalmic goiter cases there were four parathyroids and in the other only two. He found that the parathyroids had been removed with the goiter in about half of the cases with technics other than Kocher's.

Archives des Maladies de l'Appareil Digestif, Paris

January, VIII, No. 1, pp. 1-60

36 *Megacolon: Six Cases. R. Bensaude and E. Sorrel.
37 Case of "Rectal Aerophagia." Taillens.

36. **Megacolon.**—Bensaude and Sorrel give an illustrated description of six cases, emphasizing that when a loop of intestine is abnormally long it is frequently abnormally large in every direction. The sigmoid flexure is almost invariably involved with megacolon, so that direct inspection of the rectum will generally reveal the cause of the disturbances. They found a kind of valve in the upper part of the rectum in all the cases in which the abnormally large colon caused severe trouble, and they think that this valve formation is comparatively frequent with megacolon; it is formed by a simple kinking of the bowel and straightens out usually after the operation. The various indications for operative treatment are reviewed according as the stagnation of feces occurs in a small or extensive region.

Archives des Maladies du Cœur, etc., Paris

February, VII, No. 2, pp. 81-160

38 Alternating Heart-Beat. (Le coeur alternant.) C. Pezzi and E. Donzelot.
39 The Cardiogram Taken Reclining on Left Side in Valvular Disease. J. J. Manoukhine.
40 Testing the Resisting Power of the Blood Corpuscles. (Les courbes normales de l'hémolyse par les solutions salines hypotoniques.) E. May.
41 Case of Complete and Permanent Arhythmia under Supervision for Thirty-Two Years. J. Heitz.

Bulletin de l'Académie de Médecine, Paris

February 17, LXXVIII, No. 7, pp. 227-270

42 *Poisoning from Custard. (Les empoisonnements par les gâteaux à la crème.) Chantemesse.
43 *Salvarsanized Serum. (L'emploi des injections de sérum salvarsanisé "in vivo" et "in vitro" dans l'arachnoide spinale et cérébrale, dans le tabes et la paralysie générale.) G. Marinesco and J. Minea.
44 Route of Intracranial Infection from Sinusitis. (Des voies suivies par l'infection endocranienne au cours des antrites suppurées de la face.) Sieur.

42. Summarized and discussed editorially, page 939.

43. **Spirocheticidal Action of Serum of Syphilitics Treated with Salvarsan.**—Marinesco and Minea relate experiences along the lines of those recently reported by Swift and Ellis, summarized in The Journal, Oct. 25, 1913, p. 1572. The communication was reviewed editorially, page 935.

Journal de Médecine de Bordeaux, Paris

February 15, LXXXV, No. 7, pp. 109-122

45 Hygiene of Cities. L. Barthe.
46 *Operative Correction of Undescended Testicle. (L'orchidopexie crurale dans le traitement chirurgical de l'ectopie testiculaire inguinale.) Ayguesparsse.

46. **Undescended Testicle.**—Of the twenty-two patients with undescended testicle treated with Rocher's method, perfect results were obtained in 74 per cent. and fair results in an additional 8 per cent. In the others the spermatic cord was so short that the testicle could never be drawn down to its normal place. Five cases are described in detail. After the testicle has been drawn down into the normal place in the scrotum, it is held there by a suture fastening it to the skin of the thigh for eight or twelve days. Recent reexamination of the patients has shown that the results obtained in this way in three weeks are permanent.

Lyon Médical, Lyons

February 15, XLVI, No. 7, pp. 329-388

47 Reeducation of Speech in Motor Aphasia. J. Froment and O. Monod. Commenced in No. 4.

Presse Médicale, Paris

Februcry 14, XXII, No. 13, pp. 121-132

48 *Intravenous Injection of Concentrated Sugar Solution as Tonic and Disintoxicant. (Des injections intraveineuses de sérum glycosé fortement hypertonique, à 300 pour 1.000.) E. Enriquez.
49 Local Treatment of Asthma. M. Sourdille.

February 18, No. 14, pp. 133-140

50 Roentgenotherapy of Hyperfunctioning Ductless Glands. (Traitement par les rayons X des glandes à sécrétion interne en état d'hyperactivité.) A. Zimmern and Cottenot.
51 Obstetrical Table-Bed. Vassel.

48. **Intravenous Injection of Strong Sugar Solution as Stimulant and Tonic.**—Enriquez' results with a 30 per cent. solution of sugar injected into a vein have been so striking that cable reports of them were published in the papers last month. He has given the injections to fifty patients, some of them receiving up to thirty injections. Glucose is the form of sugar used and he injects very slowly about 250 or 300 c.c. into a vein at the elbow, taking an hour to inject this amount. In some cases he made two or three such injections daily, thus administering up to 300 c.c. of the sugar during the day, representing a total of 1,200 calories. This hypertonic, strongly concentrated solution seemed to be entirely harmless, nothing being apparent at any time which suggested injury of the blood or other damage from the injections. It seems probable that the sugar thus introduced so very slowly becomes transformed at once into glycogen and is transported immediately to the liver, muscles and myocardium where it accomplishes its physiologic task. The proportion of sugar in the blood keeps within normal range and only a minute portion of the sugar passes into the urine, never above 4 or 5 gm. at most, and this only during the first two hours after the injection. It causes an increase in the total amount of blood as fluid is attracted from the tissues by the concentrated solution; the blood-pressure rises and the output of urine increases. This attraction of fluid out of the tissues into the blood is a powerful aid in ridding the system of toxins, bacterial or of other origin, and of poisons, especially accumulated anesthetics. After a general anesthesia, this dehydration of the tissues and consequent flushing out of the system is an important therapeutic measure besides supplying nourishment. It induces what he calls an emergency diuresis when cardiac compensation has been upset, clearing the field for heart tonics to act. It is particularly useful when, on account of kidney trouble, administration of salt is deemed unwise. The indications for the sugar are thus in all conditions of severe infection or intoxication, inanition, defective heart action, etc., in which the clinical gravity of the condition is shown by the decreased output of urine.

Revue de Chirurgie, Paris

February, XXXIV, No. 2, pp. 105-232

52 *Gall-Stones Beyond the Bifurcation of the Hepatic Duct. (La lithiase des branches de bifurcation de l'hépatique.) E. Quénu and P. Mathieu.
53 *Technic for Removal of Parotid Gland. (Conservation des rameaux supérieurs du facial dans l'extirpation totale de la parotide en dehors du cancer.) P. Duval.
54 *Ligation of Vessels and Injection of Formaldehyd in Treatment of Angioma on the Face; Four cases. (Angiomes étendus, diffus ou pulsatiles de la face.) H. Morestin.
55 Wisdom Tooth Disturbances. (Accidents de la dent de sagesse.) F. Moty.
56 Sterilization of Water by Ultraviolet Rays for Surgical Use. M. Brulé.

52. **Gall-Stones in Hepatic Duct.**—Quénu and Mathieu found gall-stones in three cases in the ducts which unite to form the hepatic duct, and were impressed with the way in which

they were embedded in the walls. In one of the cases the entire biliary apparatus was stuffed with concrements; about 160 were taken out and extra provisions were made for drainage which brought away several more. During the two following months there were two slight attacks of jaundice, after which there was no further trouble and the patient has been in good health since to date. They have found four cases on record in which a gall-stone developed in the liver, entailing suppuration as a rule. On the basis of their three cases and of four from Kehr's experience, they sketch the clinical picture of the disturbances which result from development of concrements in the intrahepatic part of the hepatic duct. The patient has usually long had symptoms suggesting gallstone mischief, and the pain is particularly intense. The jaundice and tenderness have nothing characteristic unless on direct palpation after the abdomen has been opened. By operating promptly on recurrence of symptoms it proved possible to cure the patients completely in the personal cases reported although at first the results of the intervention were far from satisfactory, as it proved impossible to find and remove all the concrements at first.

53. **Removal of the Parotid Gland without Injury of the Upper Branches of the Facial Nerve.**—Duval reports a case of non-malignant tumor in the parotid gland with illustrations of the technic with which he found it possible to save from injury the upper branches of the facial nerve.

54. **Extensive Angioma of the Face.**—Morestin ligates the afferent vessels and injects formaldehyd, and reports extremely satisfactory results in four cases of extensive, diffuse or pulsating angiomas disfiguring women. He ligates both arteries and veins, working through an incision in a fold of skin in the neck, and ligating the external carotid and then each of its branches in turn, especially the superior thyroid, the facial and the lingual. According to the extent of the angioma, the facial vein, the external or internal jugular veins or both should be ligated. After the incision has been sutured he introduces a long needle across the whole diameter of the angioma and ejects five or six drops of the liquid as he withdraws the needle. It is then introduced anew 1 cm. farther along and the procedure is repeated until the entire extent of the angioma has been brought under the influence of the caustic. The angioma swelled afterward but there was little if any pain and it is transient. As the swelling goes down, the angioma is seen as a hard mass which gradually softens up and the destroyed particles seem to be absorbed. The procedure is then repeated on the parts which seem to have escaped the action of the formaldehyd. There was no hemorrhage at any time and the mortified tissues were absorbed or thrown off without complications. There was no special febrile reaction, no sign of embolism or intoxication. The main point is to make the injection carefully to avoid giving cause for development of gangrene. The amount injected seems of less moment. He injected from 7 to 12 c.c. at a sitting of a mixture of one-third 90 per cent. alcohol; one-third glycerin and one-third formaldehyd. Of course general anesthesia is necessary for the ligation of the vessels and the injections, and the method is applicable only for the severer cases of pulsating angiomas and varicose tumors in the face.

Revue de Gynécologie, Paris

January, XXII, No. 1, pp. 1-80

57 *Syndrome from Adrenal Disease in Women. (Diagnostic anatomo-clinique du syndrome génito-surrénal.) A. Gallais.
58 *Tuberculosis of the Uterine Cervix. X. Bender.

57. **Adrenal Disease.**—Gallais refers particularly to tumors in the adrenal glands or simple hyperplasia, stating that in his experience and judging from the literature, they are invariably accompanied by atrophy of the internal genital organs. The typical findings are proliferation of the adrenal cortex plus atrophy of the ovary. The disturbances which result from this combination are of four types: (1) adrenal pseudohermaphrodism; (2) adrenal virilism; (3) the menstrual type, and (4) the obstetric type. In the first form the secondary sexual characters develop early and are of a male type, so that pseudohermaphrodism may be regarded as a sign of simple hypertrophy of the adrenal cortex. When there is an actual tumor in this cortex the male characteristics become exaggerated, with obesity, hypertrichosis and menstrual disturbances. In young girls, puberty comes on early and with male characters; in a boy, the sexual development is premature. In men there is a tendency to premature general weakness, and women become masculine in their muscular strength at first, but then nervous and mental symptoms develop, with irritability and dread. Dysmenorrhea is the principal symptom of the third or menstrual type in women over 20. There is always more or less hypertrichosis or pigmentation, and there may be symptoms of exophthalmic goiter. The obstetric type is like the others except that it manifests itself first with a pregnancy, usually extra-uterine. In one of Gallais' cases the patient died in convulsions and coma, the work of hemorrhage in the adrenal, the seat of an adenoma. He discusses the differentiation of this adrenal-genital syndrome from tabes, meningitis, brain tumors, sexual inversion, periodical psychoses, and other troubles with which it may be confounded. Ovarian extract therapy supplies the lacking internal secretion of the ovary, and is the logical treatment with removal of the cause, the adrenal tumor, when practicable. Wendel has compiled six lumbar operations for an adrenal tumor with four deaths, and seventeen transperitoneal operations with only seven deaths.

58. **Tuberculosis of the Uterine Cervix.**—Bender here reports a second case in which a conservative operation cured the patient completely of a tuberculous process in the uterine cervix. This patient was a woman of 34 with three healthy children. She had long had leukorrhea and, after a miscarriage in 1911, pain in the lumbar region and a sensation of oppression in the pelvis while the discharge became purulent and an ulcerative process developed on the cervix. Amputation of the cervix removed all trouble at once and there has been no recurrence of trouble during the more than two years since.

Archiv für klinische Chirurgie, Berlin

CIII, No. 3, pp. 585-868. Last indexed February 21, p. 652

59 *Localization of Abdominal Tumors by Palpation. (Lokalisation von Abdominaltumoren mit Hülfe der topographischen Gleit- und Tiefenpalpation.) T. Hausmann.
60 *Serodiagnosis of Cancer. (Zur Frühdiagnose des Carcinoms vermittels der Abderhalden'schen Fermentreaktion.) F. Heimann and K. Fritsch.
61 *Tendency to Hernia in the Fetus and Young Children. (Vorkommen von Bruchanlagen bei Föten und jungen Kindern.) P. Bernstein.
62 Injury of the Gluteal Arteries. (Verletzungen und traumatische Aneurysmen der Arteria glutea superior et inferior s. ischiadica.) D. Frischberg.
63 Technic for Side-to-Side Entero-Anastomosis. (Mechanik der Lateralanastomosen im Magen-Darmkanal.) G. Kelling.
64 Giant Growth with Atrophy of Genital Organs. (Fall von Riesenwuchs mit Atrophie der Geschlechtsorgane.) Z. Brind.
65 Research on Regeneration and Transplantation of Bone. (Bedeutung der einzelnen Komponenten des Knochengewebes bei der Regeneration und Transplantation von Knochen.) L. Mayer and E. Wehner.
66 Case of Progressive Ossifying Myositis. E. Blenkle.
67 *Treatment of Appendicitic Purulent Peritonitis. F. Sasse.
68 Infection of Battle-Field Wounds. (Die Wundinfektion im Kriege.) A. W. Meyer.
69 Metastatic Necrosis of Costal Cartilage. O. Harzbecker.
70 Tuberculosis of the Cecum. (Hypertrophische Blinddarmtuberkulose.) E. A. Delfino.
71 *Pyelography. (Zur Kollargolfüllung des Nierenbeckens.) V. Blum.

59. **Palpation of Abdominal Tumors.**—Hausmann says that young physicians and surgeons are making a great mistake in hurrying the patients into the Roentgen-ray room without taking time to make a thorough local examination by palpation. All methods are liable to fail at times and exact estimation of conditions is usually possible only by combining various methods, and palpation is beyond question the main thing in study of abdominal tumors. With what he calls the sliding and deep palpation (*Gleit- und Tiefenpalpation*) or topographical palpatory diagnosis, it is possible to palpate the normal greater curvature of the stomach in 45 per cent. of those examined; the normal antrum of the pylorus in 25 per cent.; the transverse colon in 60 per cent.; the sigmoid flexure

in 90 per cent.; the cecal portion of the ileum in 85 per cent. and the cecum in 75 per cent. The usual rule that these organs are not accessible to palpation unless they are abnormally hard or enlarged, is shown by this method of palpation to be incorrect; even the appendix can thus be outlined provided it is possible to reach the posterior abdominal wall, for this is the secret, to work down to the rear abdominal wall for the solid background and then feel the organ we are examining as the finger is drawn across it at a right angle to its axis. This transverse sliding of the finger across the bowel or other organ being examined, first working deep in until this organ lies between the palpating finger and the rear abdominal wall enable surprisingly accurate estimation of conditions and show up any tumor growth with nearly all its details. It is important to do the palpating only and exclusively during expiration, stopping as the patient breathes, each time. The localization of the tumor proceeds by exclusion, as a rule, first locating and excluding the stomach, the colon, etc., thus narrowing down the diagnosis.

He gives sketches of the findings with this palpation in twenty-six typical cases, showing the organs that had been excluded from participation in the growth, and comparing the findings with those at the operation or necropsy. Buttersack says of this method that it is as much of an improvement over the old methods of palpation as a modern chronometer is an improvement over a sun-dial. Hausmann reiterates that this method often renders roentgenoscopy superfluous or first interprets the findings of the latter. It renders one independent of the Roentgen apparatus and frequently obviates the necessity for an exploratory laparotomy. One of the greatest advantages of the method is that it easily differentiates a spasmodic contraction of the pylorus from a tumor in the region. In one of the cases of spastic contracture related the radiating pain and the enlargement found at the pylorus were interpreted by the attending physician as a tumor. In spite of Hausmann's protests the abdomen was opened; the stomach was found healthy with no sign of tumor. The appendix was not examined, and afterward as before the pains continued and the appendix region was tender. In another case the greater curvature of the stomach could be palpated above the tumor in the umbilicus region, and the transverse colon below. It proved to be in a lobe of a corset liver studded with nodules. (Hausmann's previous communication on the subject was mentioned in these columns, Dec. 20, 1913, p. 2280.)

60. **Serodiagnosis of Cancer.**—Heimann and Fritsch expatiate on the importance of Abderhalden's dialysis method of serodiagnosis as a means of detecting incipient cancer. It is in this line that it is destined to prove of most use, they think. In a series of thirty-four persons tested, the findings were constantly negative in the seven non-malignant cases and, with three exceptions, constantly positive in the cancer cases. The three cases of advanced cancer in which negative results were obtained show that the method is not infallible but, even allowing this, it is proving a most valuable means of differentiating malignant disease in too early a stage for a clinical diagnosis. In one case a man of 39 had a rebellious ulceration develop in the scar of an old focus of osteomyelitis with fistula. The ulceration kept up for four months but showed no signs of malignancy. The biologic diagnosis by dialysis gave a positive response with cancer tissue, and microscopic examination disclosed cancer cells. In another case, in a man of 66, a tumor starting in the prepuce had every appearance of cancer, yet gave constantly negative responses to cancer tissue from three different sources, and here also the microscope confirmed the negative serodiagnosis, showing in this instance that the tumor was a simple papilloma.

61. **Congenital Predisposition to Hernia.**—Bernstein examined 99 cadavers of fetuses and children under 2 and found a pronounced tendency to hernia in 17, including 12 fetuses, 1 of which was at the fifth month and 2 at the eighth.

67. **Treatment of Diffuse Peritonitis Originating in the Appendix.**—Sasse rolls gauze into a long, loose, narrow strip and works one end of this tampon straight in to wall off the focus and act as a drain. From six to eight or more tampons can thus be worked in from a single small incision on one or both sides. He carries the tampon up to the space just below the diaphragm and below the liver and down into the pelvis, and reports experiences which confirm the advantages of this method of treating severe suppurative peritonitis from appendix mischief. Of his 141 patients with peritonitis thus treated all recovered but fifteen; his mortality was thus 10.6 per cent. The article is illustrated.

71. **Pyelography.**—Blum calls attention to five fatalities in recent months from the procedure of filling the kidney pelvis with a solution of a silver salt for roentgenoscopy — all but one occurred in America — and declares that with the present technic it is taking an unjustifiable risk to apply the method to a normal kidney, and much more to a pathologic kidney. He denounces the measure as fraught with various dangers while we have other equally instructive and far less dangerous procedures for the purpose, namely, roentgenoscopy with a shadow-casting ureter catheter in place; the findings with catheterization of the ureter; measuring the space between the bladder and the pelvis; measuring the residual urine, and applying Völcker's localization technic, and the findings with functional tests of the kidneys which give an accurate picture of the extent of destruction of the kidney parenchyma.

Archiv für Verdauungs-Krankheiten, Berlin

February, XX, No. 1, pp. 1-146

72 *Diarrhea of Thyroid Origin. H. Curschmann.
73 *Comparative Dietetic Study of Cow's Milk and "Milk" Expressed from Nuts. A. Fischer.
74 *Simple Test for Motor Functioning of the Stomach. (Ueber Motilitätsbestimmung des Magens, mit bes. Berücksichtigung der Boasschen Chlorophyllmethode.) H. Kemmerling and B. Wartensleben.
75 *Carmin in Gastro-Intestinal Diagnosis. S. Basch (N. Y.).
76 Hour-Glass Stomach. (Roentgenologisches und Klinisches zur Frage des Sanduhrmagens.) A. Reizenstein and F. Frei.

72. **Diarrhea of Thyroid Origin.**—Curschmann explains why surgeons encounter diarrhea in exophthalmic goiter in nearly 50 per cent. of their cases, as due to the fact that they see only the advanced cases and in these diarrhea is frequent and adds to the gravity of the prognosis. He calls attention to a case reported in detail in which a woman of 43 had severe diarrhea mornings for six months, rebellious to all measures and entailing menacing debility. Except for some enlargement of the thyroid since the age of 16, she had always been healthy. Curschmann suspected thyroid intoxication and obtained a positive response to the Loewi test, that is, mydriasis on instillation of epinephrin in the eye. The blood showed also positive lymphocytosis which Kocher regards as pathognomonic for Basedow's disease. On these findings and on these alone Curschmann resected the thyroid, and at once the diarrhea was cured and the patient promptly recovered, regaining full earning capacity in less than two months. There had been no other signs of exophthalmic goiter at any time. The diarrhea came on always in the morning, directly after waking. In this connection he calls attention to the dissociated reaction of the pupils, the exact reverse of the Argyll Robertson sign, which he has never encountered except in exophthalmic goiter. The epinephrin mydriasis is only one link in the chain of symptoms, but it with other symptoms points to insufficient functioning of the pancreas as a factor superposed on the excessive thyroid functioning. The connection between these glands suggests that pancreas extract might be given a trial in cases of diarrhea of thyroid origin, and may render resection of the thyroid superfluous. In conclusion he warns that a thyroid origin should be suspected in all cases of obstinate "nervous" diarrhea even without any other indications of thyroid disturbance.

73. **Cow's Milk and Vegetable Milk.**—Fischer reports comparative research on the digestibility of the "milk" obtained by expression from almonds and other nuts. It is of course an emulsion, the same as cow's milk, he says, and contains more calories, 90 to 115 in contrast to the 67 in cow's milk per 100 c.c. The vegetable milk coagulates in finer flakes but does not stimulate gastric secretion to the same extent.

74. Convenient Test for Motor Functioning of the Stomach.—Boas' chlorophyl test was described in THE JOURNAL, April 13, 1912, p. 1158. This communication from the Düsseldorf hospital reports application of this test in 50 cases. The findings coincided with the Leube and roentgenoscopic findings in 62 per cent. of the cases, showing that the principle of the method is correct. But there are so many sources of error in the technic at present, Kemmerling says, that he does not think the test is ready for general adoption.

Wartensleben writes from Boas' clinic in Berlin to report the further experiences with the test to date, an additional series of fifty-nine patients. The findings coincided with the Leube and roentgenoscopic findings in 78 per cent., and the method is lauded as permitting nearly exact estimation of the functional capacity of the stomach and this in the very simplest manner. There are about twenty methods in vogue, he adds, for testing stomach functioning, but most of them make such demands on the patient that with the usual debility it is impossible to apply them. This objection is obviated with the chlorophyl technic, which is merely the drinking of 400 c.c. of a green-stained water from a green glass. With this there is no stimulating of the stomach mucosa to disturb the findings and the technic is simple and convenient for both patient and physician, while there are comparatively few sources of error. This test clears up many obscure conditions in the stomach and shows when conservative measures are meeting with success and when with failure so that operative treatment is imperative.

75. Employment of Carmine in Gastro-Intestinal Diagnosis.—This article was published in THE JOURNAL, Oct. 4, 1913, p. 1295.

Berliner klinische Wochenschrift

February 16, LI, No. 7, pp. 289-336

77 Injury of Cartilage and Bone from Infection in First Period of Growth. (Lokalisation der Bakterien, die Veränderungen des Knochenmarks und der Knochen bei Infektionskrankheiten im ersten Wachstumsalter.) J. Koch.
78 Enlarged Spleen Subsides under Exposure to Radium; Four Cases. (Wirkung von Radium auf Milztumoren.) H. Schüler.
79 Correction of Cleft Palate. (Die "Normierung" des Oberkiefers bei kompletter Kieferspalte.) W. Neumann.
80 Abducent Paralysis and Meningitis Secondary to Acute Otitis Media. R. Lehmann.
81 Trypanosome Diseases in Animals in German East-Africa. H. Braun.
82 Experimental Transmission of Trypanosomes by Flies. (Uebertragungsversuche mit Glossinen.) E. Teichmann.
83 *Streptodiplococcus as Cause of Small-Pox.* (*Ueber den* Pockenerreger.) M. Rabinowitsch.
84 Technic for Wassermann Test. (Zur Lehre vom "Wasserfehler.") W. Wechselmann.
85 Technic for Roentgenotherapy. (Tiefenbestrahlung.) F. Davidsohn.
86 Experimental Research to Date on Poliomyelitis. O. Thomsen.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 14, XLIV, No. 7, pp. 193-224

87 Causes and Treatment of the Anemias. O. Roth.
88 The Morally Defective. (Behandlung der moralisch Schwachsinnigen.) Bleuler.

February 21, No. 8, pp. 225-256

89 *The Mendelian Laws of Heredity in Two Family Strains with Syndactylia. C. Schlatter.
90 Roentgenotherapy in Gynecology. E. Partos.

89. Inheritance of Webbed Fingers or Toes.—In one of the two families described there were sixty-one members of the family in the course of four generations and fourteen had pronounced syndactylia. The deformity jumped the second generation and returned in large numbers in the third and fourth, but without, apparently, conforming to the Mendelian laws of heredity. In the other family the deformity was found in nineteen of the thirty-three members of the family in four generations, and here a conformity to Mendel's laws was apparent. The first member known to be thus affected married a man with the same deformity, and all their nine children presented it. All the children of one of the daughters had the deformity and only half of the children of another daughter had it, half being normal. Schlatter remarks that a knowledge of a hereditary tendency to deformity may sometimes help the physician when he is consulted on account of birthmarks, "maternal impressions," etc.

Deutsche medizinische Wochenschrift, Berlin

February 12, XL, No. 7, pp. 313-368

91 *Management of Infants Who Cannot or Will Not Take Nourishment. (*Behandlung der bedrohlichen Nahrungsverweigerung und Anorexie der Säuglinge.*) L. Tobler.
92 Abderhalden's Serodiagnosis of Pregnancy Not Specific and Not Reliable. (Die Abderhaldensche Schwangerschaftsdiagnose.) L. Michaelis and L. v. Lagermarck.
93 Serodiagnosis of Mental Disease. (Psychosen, Abbau- und [illegible]) M. Kastan.
94 *[illegible] Poliomyelitis. (Keimträger bei [illegible] and A. Pettersson.
95 Death from Loss of Hypophysis Functioning. (Hypophysisschwund mit tödlichem Ausgang.) M. Simmonds.
96 Echinococcus Disease of the Brain. (Cysticercus racemosus fossae Sylvii.) O. Rein.
97 Lipomatosis. (Vielgestaltigkeit der Lipomatosis universalis.) E. H. Kisch.
98 *Blocking the Sciatic Nerve. (Regionäre Anästhesierung bei Frakturen der unteren Extremität.) P. Babitzki.
99 *Special Features of Operations on Infants. (Säuglingschirurgie.) H. Stettiner.
100 *Sympathetic Ophthalmia. R. Krailsheimer.
101 From the Balkan Wars. M. Makkas. Commenced in No. 5.

91. Infants Who Cannot or Will Not Take Nourishment.—Tobler discusses how to stimulate the appetite of an infant suffering from anorexia and how to feed one when there is some obstacle to its taking nourishment. He reiterates anew the importance of exercise, air and water in stimulating the appetite; an alcohol rub may also aid in this and the sight of another child being fed. With acute inanition, the lack of water may cause severe disturbance, and rectal enemas repeated two or three times a day may help, given slowly and not allowed to run out. For feeding through the nose, a spoon with the tip turned up funnel shape is useful. As a small amount of fluid reaches the rear wall of the pharynx it elicits by reflex action a normal swallowing movement. Young infants can be readily fed in this way without trouble, the child lying on its back with shoulders slightly raised. This method of feeding may proceed more regularly than feeding by the mouth in some cases, with less going astray of the fluid. When more food is to be given or the infant is older, gavage may be tried; it proceeds more smoothly in infants than in adults, and reduces retching to the minimum. He uses a Nelaton catheter No. 13 or 16, lubricating with oil, pushing the tube through the nostril to the rear wall of the pharynx, then utilizing the swallowing act to work it along. It is then cautiously worked farther down into the throat and then rapidly pushed into the stomach. Its arrival in the stomach is generally announced by escape of air. When the voice is loud and the child breathes freely, the catheter can be only in the stomach. He gives an illustration of the technic, and says that its harmlessness can be estimated from the fact that one French physician has reported the case of a child who refused to take nourishment and he had to apply this nasal method of feeding for over two years, feeding it in this way over 2,500 times, tiding the infant along to final sturdy health.

94. Transmission of Epidemic Poliomyelitis.—Kling and Pettersson had the nose and throat thoroughly rinsed of healthy persons in the environment of a case of poliomyelitis, thus obtained one or two liters of rinsing water from the family. A monkey was inoculated with some of the fluid and developed the disease although none of the persons from whom the fluid was derived had developed it. As the rinsing fluid from the wife, 12-year-old son and two older daughters had been mixed, it was impossible to tell from which member of the family the infecting germs had been derived; all were healthy at the time and remained so. Similar tests with the rinsing fluid from three other families — a total of four persons — failed to induce positive results.

98. Blocking the Sciatic Nerve in Treatment of Fracture.—Babitzki comments on the way in which the apparently most successful reduction of a fractured leg may be shown on roentgenoscopy to be faulty when the patient is put under the influence of an anesthetic, relaxing the muscles. It is not always practicable or safe to administer a general anesthetic, and he states that the desired result can be obtained equally well by restricting the anesthesia to the limb, blocking the sciatic nerve where it passes through the great sacrosciatic foramen, or the femoral nerve or both. He has applied this technic in sixty-five cases and commends it as simple and effectual and a most important aid in reduction of a fracture in leg or thigh. The needle to inject the anesthetic is introduced under the guidance of the finger in the rectum; with this help it is a simple procedure to find the nerve and block it with the anesthetic, the patient lying prone. The finger in the rectum readily locates the spine of the ischium and slides along the margin of the foramen for 2 or 3 cm. The needle is about 10 cm. long and is pushed in toward the finger by the shortest route. When the finger can feel the needle, the injection is made at once. The anesthesia thus induced lasts from one and a half to two hours and permits examination, reduction, dressing and splinting the fracture without the least pain. In about two-thirds of the sixty-five cases in which he has blocked the nerve in this way for a fracture, the patients were fitted with a walking splint or other appliance made according to Wolkowitsch's principles with most excellent results.

99. **Operations on Infants.**—Stettiner reports from his service at Berlin that necropsy of one infant of four weeks showed pronounced appendicitis. In four cases he tried to remedy atresia ani, but concludes that not much can be hoped from this unless there is a sphincter or one can be made. Further malformations generally accompany the imperforate anus. One child less than a year old died from appendicitis and two from invagination. This experience teaches the necessity for early operative intervention in such cases; the children were practically moribund when brought to the hospital. With severe hypospadias a series of operations may be necessary and he advocates making a preliminary temporary outlet in the perineum for the urine. This renders conditions far more favorable for the operation proper.

100. **Sympathetic Ophthalmia.**—In two of the four cases described, the sympathetically involved eye was enucleated, permitting anatomic study of the changes involved. In one case the sympathetically involved eye was destroyed while the first eye retained some vision. In the third case the sympathetic process involved the deeper parts of the eye while in the fourth only the iris and ciliary body were involved.

Jahrbuch für Kinderheilkunde, Berlin

February, LXXIX, No. 2, pp. 123-260

102 Value in Diagnosis and Prognosis of Repeated Local Tuberculin Reactions. G. Bessau and J. Schwenke.
103 Nature of Hypersensitiveness to Tuberculin. G. Bessau and J. Schwenke.
104 *Acute Non-Specific Pneumonia during the First Few Days of Life. T. E. H. Thaysen.
105 Gallop Rhythm and Extra Systoles in Diphtheric Myocarditis. W. Blacher.
106 Treatment of Rachitis. III. E. Schloss
107 *Effect of Scarlet Fever on the Wassermann Reaction. B. Jakobovics.

104. **Pneumonia in Early Infancy.**—Thaysen divides the pneumonias of the first few days of life into four groups: (1) placental infections, among which are the syphilitic and tuberculous cases and also probably the pneumococcus pneumonias and the rare cases of streptococcus and staphylococcus pneumonia; (2) aspiration pneumonias caused by aspiration of uterus content or of secretion from the normal or pathologic birth canal, also by aspiration of milk or secretion from the mouth; (3) air-borne pneumonias, which are probably very rare in the early days of life; lastly, metastatic pneumonias, which are also rare, from umbilical infection or an intestinal or other lesion. Aspiration pneumonia is by far the most frequent, especially that caused by aspiration of vaginal secretion containing bacteria, from the vagina of a healthy mother.

107. **The Wassermann Reaction in Scarlet Fever.**—Jakobovics examined fifty-five scarlet-fever patients and obtained a positive Wassermann reaction in eighteen. This positive reaction occurs after the subsidence of the acute symptoms and generally only in the severer cases. It usually disappears by the end of the period of desquamation and has no effect on the diagnostic importance of the reaction in syphilis. No conclusions can be drawn from it as to the etiology of scarlet fever.

Medizinische Klinik, Berlin

February 15, X, No. 7, pp. 269-312

108 *Tumors of Central Origin in Bones. (Centrale chirurgische Knochenerkrankungen.) F. Landois.
109 Diagnosis of Functional Capacity of the Kidneys. (Funktionelle Diagnostik der Nierenkrankheiten.) T. Janowski. Commenced No. 6.
110 *Infant-Feeding [illegible] zur Herstellung der wichtigsten [illegible] len Säugling im Privathause.)
111 *Deafmutism. (Gehör und Stummheit.) E. Fröschels.
112 *Acute Polymyositis. J. Schmautzer.
113 Extraction of Teeth in Prophylaxis. (Die Extraktion von Zähnen im Dienste der Prophylaxe und Therapie bei Stellungsanomalien.) E. Goldmann.
114 *Symptom of Aortic Insufficiency. P. Baj di G.
115 Tests for Urobilinuria with Liver Disease. (Zur Urobilinurie bei primären Lebererkrankungen und Stauungsleber.) T. Hausmann.
116 Influence of the Nervous System on Regulation of Heat and the Metabolism. R. Isenschmid.

108. **Bone Disease of Central Origin.**—Landois discusses osteomyelitis causing cysts, and syphilitic and malignant affections, and propounds a number of problems, especially why certain carcinomas tend to metastasis in the bone marrow. It not infrequently happens that women with mammary cancer have a spontaneous fracture of a long bone and roentgenoscopy reveals the marrow studded with cancer nodules. Similar nodules are liable to develop with carcinoma of the prostate. Other cancers which have metastasis in the bone marrow are the hypernephromas and Grawitz tumors in the kidney, and cancer of the thyroid. The strange fact has been noted that metastasis in the bone from cancer in the thyroid is able to protect the individual against myxedema after removal of the thyroid. This fact, he remarks, teaches that the dreaded cancer cell, the destroyer of our organism, can, under such circumstances, assume the function of an organ.

110. **Infant Feeding.**—Müller and Schloss comment on the great progress that has been realized in infant feeding since the numerous institutions for infant welfare have been founded, permitting the supervision of infants from the first week on. In this way much that is valuable has been learned from experience with healthy and sick babies in regard to different types of infant feeding. They here describe the technic for the production in the private home of five different kinds of artificial food for infants so that a mother with any intelligence can easily make protein milk, malted gruel, etc.

111. **Mutism and the Hearing.**—Fröschels calls attention in this study of deafmutism to the defective respiration which is the result of the lack of speech. He also emphasizes the necessity for training every scrap of hearing which a child may possess, repeating the exercises again and again during the day and with different voices. He also urges the importance of commencing early, even at the age of 2, never letting the fourth year pass without commencing training, especially when the trouble is mutism from psychic deafness.

112. **Acute Polymyositis.**—Schmautzer's patient was a man of 46 who had had acute articular rheumatism five years before but was otherwise healthy. In June, 1912, he had difficulty in swallowing, shown by roentgenoscopy to be due to a spastic contraction 22 cm. below the teeth. This was accepted as a sign of cancer, but it proved to be the first manifestation of acute polymyositis. Drugs had no effect but the contraction was cured by mechanical dilatation so that by November he was nearly free from all trouble. After a month he began to complain of sacral pain and pains in the shoulders and arms, insomnia and depression, with slight fever. The brachial plexus was tender and two weeks later the right upper arm swelled and was tender, but there were no signs of edema. Later the neck and the other arm swelled and other muscles became swollen and tender and obstinate bronchial catarrh developed. The myositis developed in waves, the temperature running up and then the symptoms subsiding with intervals of days or weeks. The lips and lids swelled, and by February, 1913, the disturbances in swallowing returned; the pulse ran up and became irregular and small and the patient died in April with signs of muscular insufficiency. Scraps from the myocardium and tibialis anticus showed small patches of acute inflammatory infiltration. Acute

polymyositis generally terminates fatally; the muscles involved become atrophied at the best. The course ranged from ten days to months or years in the cases on record. No therapeutic measures seem to be of any avail.

114. **Symptom of Aortic Insufficiency.**—Baj di G states that he found the minimal blood-pressure extremely low in his twenty-five cases of aortic insufficiency among a thousand patients in whom he determined the maximal and minimal blood-pressure. The normal standard seems to be between 135 and 150 mm. mercury for the maximal pressure and between 90 and 110 mm. for the minimal. With arteriosclerosis, the minimal pressure is never below 80 or 82 mm., but with aortic insufficiency he found it constantly below 75 and only 60 in the majority. He regards this low minimal pressure as a pathognomonic symptom of insufficiency of the aorta.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

February, XXXIX, No. 2, pp. 147-268

117 *Eclampsia at Königsberg. A. Schiller.
118 Frequency and Obstetric Import of Abnormally Large Children. (Riesenkinder.) J. Lejbowitsch.
119 Delivery after Antefixation of the Uterus. H. Küster.
120 Treatment of Carcinoma of the Genital Organs with Mesothorium. C. Weinbrenner.
121 Relation between Myoma and Carcinoma of the Body of the Uterus. H. Jansen.

117. **Eclampsia.**—This article is based on 360 cases at the Königsberg University Clinic. A historical review is given of the methods that have been used there since 1882. At present, as in the past, the treatment is based on the assumption of the placental origin of the intoxication, and therefore the uterus is emptied as quickly as possible. Vaginal cesarean section is for this the method of choice. The principle followed is that the uterus should be evacuated at the first signs of the eclampsia intoxication. If considerable time has elapsed since the beginning of the eclampsia, operative delivery is dangerous, probably because the body is too much weakened by the toxin to stand it. In such cases conservative treatment is to be preferred, namely, venesection and Stroganoff's prophylactic method with the narcotics limited as much as possible. It is accepted as the general rule that active treatment should not be undertaken if more than six or seven hours have elapsed since the beginning of the attacks.

Münchener medizinische Wochenschrift

February 17, LXI, No. 7, pp. 345-400

122 *Confessions of Imaginary Crime. (Selbstanklagen und pathologische Geständnisse.) K. Heilbronner.
123 Serodiagnosis of Infectious Diseases. (Zur Serodiagnostik von Infektionskrankheiten mit Hilfe des Abderhaldenschen Dialysierverfahrens.) E. Voelkel.
124 Specificity of the Protective Ferments. H. Singer.
125 *Lead Poisoning from Water Pipes. (Bleivergiftungen durch die Wasserleitung.) A. Schwenkenbecher.
126 Typhoid Epidemic at Munich Traced to Milk. Rimpau.
127 Roentgenotherapy of Tuberculosis of Ribs and Sternum. R. Bittrolff.
128 *Determination of Coagulating Property of the Blood. (Blutgerinnungsbestimmung.) L. Fingerhut and H. Wintz.
129 Simplified Technic for Abderhalden's Serodiagnosis. H. De Waele.
130 *Suction Treatment of Peritoneal Adhesions. F. Kroh.
131 Susceptibility to Epinephrin Lost in Dementia Praecox. W. Schmidt.
132 *Fatal Acute Encephalitis Following Salvarsan. T. Kohrs.
133 Hemorrhage in the Pancreas. v. Zezschwitz.
134 Calcium Chlorid for Hay Fever. (Behandlung des Heufiebers durch lange fortgesetzte tägliche Chlorkalziumzufuhr.) R. Emmerich and O. Loew.
135 Ileus. (Diagnose und Behandlung des Darmverschlusses.) W. Danielsen.

122. **Confession of Imaginary Crimes.**—Heilbronner discusses the influence on a weak mind of detective stories and the accounts of murders in the daily papers. They may at times affect the predisposed until they actually believe they have committed the crime or a similar one, or a love of notoriety or other reasons may lead to self-accusation. The rôle of the physician may be peculiarly hard in such cases, and also when a psychosis brings conditions in which the fact of some crime committed years before first comes to light. Circumstances may make it the physician's task here, he says, to prevent the patient from making a confession to the authorities of his old crime. The physician may have to restrain his patient from inflicting injury on himself in this way just as from committing suicide.

125. **Lead Poisoning from Water Pipes.**—Schwenkenbecher found signs of severe lead poisoning in twelve out of twenty-six inhabitants of a building supplied with drinking water through a lead pipe 180 meters long; six others had various symptoms suggesting lead poisoning, and only eight were free from them, and these were all children. Attention was first attracted to the cases by a woman of 38 being brought to the hospital on account of intense abdominal colic and vomiting during two months, followed by increasing paralysis in the arms, intense weakness and headache, in short, the pronounced picture of chronic lead poisoning. It was noticed that the poisoning was most severe in those who drank coffee in the morning, the water having stood in the pipes over night.

128. **Determination of Coagulating Time of the Blood.**—A simple and convenient technic is described with illustrations which seems to avoid the usual drawbacks. To begin with, a needle is used for obtaining the blood which runs into a glass bulb with a minute hole in the top as the needle is held horizontal. The blood can be taken up through this hole in the top without coming in contact with the air or juice from the tissues. In order to keep the blood constantly at body temperature, the capillary containing it is pushed at once into a glass tube which runs through a central tunnel in a glass vessel containing hot water. The tube has over a dozen openings to permit the warm air to circulate around the capillary, and the temperature of the tunnel air chamber is gauged by a right-angled thermometer built in it, the markings outside. The warmed capillary is introduced into the tube, seconds watch in hand, and then, with a wire, the capillary is drawn out for 1 cm. and the etched tip broken off, repeating this every half minute or every two or three seconds, until a thread of fibrin is discovered as the tip is broken off. The first appearance of the thread is the unmistakable sign of the beginning of coagulation.

130. **Prophylaxis of Peritoneal Adhesions.**—Kroh gives illustrations showing the almost incredible way in which the abdominal walls and bowels can be drawn up into a large suction bell. This mobilizes and influences the abdominal contents in a remarkable way, and it is possible to influence the movements of the feces while all the segments of the intestines may be affected as can be seen by roentgenoscopy. In the rabbit this vacuum massage was seen to move the bowel content along in the desired direction without fail.

132. **Acute Encephalitis after Salvarsan.**—Kohrs' patient was a robust man of 26, healthy except for balanitis and a positive Wassermann. On this account he was given mercurial inunctions and an intravenous injection of 0.6 gm. salvarsan. There were no symptoms for two days after the injection, but then acute encephalitis followed, fatal in five days. Kohrs tabulates with this eleven other similar fatalities on record to call attention to the fact that comparatively large doses had been injected in all, only one having 0.4 gm.; the others had 0.6 gm. and those with a second injection a total of 0.9 up to 1.2 gm. in less than forty days.

Wiener klinische Wochenschrift, Vienna

January 22, XXVII, No. 4, pp. 69-92

136 Two-Route Method of Treating Lupus, etc. (Ueber medikamentös kombinierte Radiumtherapie.) M. Schramek.
137 Experimental Research on Cholagogs. (Beeinflussung der Gallenwege durch Pharmaka.) F. Reach.

Zentralblatt für Chirurgie, Leipsic

February 21, XLI, No. 8, pp. 321-368

138 Diagnosis of Spinal Disease. (Wirbelsäulenerkrankungen.) A. Schanz.

Zentralblatt für Gynäkologie, Leipsic

February 21, XXXVIII, No. 8, pp. 297-328

139 Prolapse of the Rectum. (Eine neue Operationsmethode des Invaginationsprolapses des Mastdarmes der Frau.) A. Sippel.
140 *Menge's Method of Treating Postoperative Hernia. L. Prochownick.
141 Relapse after Vaginofixation. (Zwei Fälle von Abreissung der vaginifixierten Gebärmutter von der Anheftungsstelle.) J. Voigt.

140. Extensive Postoperative Hernias.—Prochownik describes in detail Menge's technic for remedying conditions of this kind, and lauds it as superior to others for the purpose. It has been successfully applied for multiple hernias in a number of cases, and this is the touchstone of the method. Conditions were very unfavorable for any operation in four of Menge's nineteen postoperative hernias thus treated and in three of Prochownik's fourteen. The principle of the method is to work through a long *transverse* incision, possibly making several smaller transverse incisions, and separate the rectus muscles completely from their fascia above and below and for a long distance up and down. The muscles are then drawn over the site of the hernia to form a solid barrier. On account of the transverse incision, the conditions which result prevent recurrence of the hernia much more effectually than with any other method. The great drawback is the tediousness of the operation; it can scarcely ever be done in less than an hour and a half, he says, and often takes up to two and a half. For this reason it is better to work with local, spinal and sacral anesthesia than by inhalation anesthesia, although a little chloroform or ether may be needed toward the end. By this means the danger from retching and coughing is avoided.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 19-21, pp. 193-224

142 Diagnostic Importance of the Diazo Reaction and Permanganate Test. F. Marcantoni.
143 Syphilitic Fever in Third Stage. G. Capello.
144 Weakness of Muscles on Paralyzed Side May Be Only Sign of Organic Nature of Hemiplegia. L. Gatti.

Policlinico, Rome

February 15, XXI, No. 7, pp. 225-260

145 Local Anesthetics in Surgical Practice. D. Pellegrino.

February 22, No. 8, pp. 261-296

146 Herpes in the Throat. (Di una rarissima forma di glotto-epiglottite, "Herpes supra laryngeus.") V. Grazzi.
147 Nearly a Quart of Gasoline Drunk without Serious Consequences. O. Bonazzi.
148 Poisoning from Sardines. (Le intossicazioni alimentari da pesci conservati-Tonno e sardine sott'olio.) M. Pergola.

February, XXI, Medical Section No 2, pp. 49-96

149 Influence of Muscular Fatigue on the Functioning of the Autonomic Nervous System in Health and with Exophthalmic Goiter. E. Tedeschi.
150 *Cancer Metastasis in the Brain. C. Silvan.

150. Metastatic Cancer in the Brain.—Silvan found 21 cases of this kind at 14,000 necropsies in which the brain was examined, that is, in 0.15 per cent.; they formed 17 per cent. of the intracranial tumors encountered. Only 8 were in men; the age was generally between 40 and 60, but one was in of woman of 22 with a sarcoma in the femur; another was in a woman of 33 with mammary cancer. The primary tumor was in the breast in 6, in the stomach in 3, in the thyroid in 2 and once each in the lung, pleura, parotid and penis. In the majority of cases there was metastasis elsewhere. The left hemisphere was the one generally involved, especially the cortex of the frontal or parietal lobes. The clinical course is compared with the findings in a number of the more typical cases.

Hospitalstidende, Copenhagen

February 11, LVII, No. 6, pp. 161-192

151 *Influence of Endogenous Factors on the Type of Progressive Paralysis. (Endogene Momenters Betydning for den progressive Paralyses kliniske Udtryk.) G. Neve.
152 *Cancer in Undescended Testicle. (Carcinoma testis abdominalis.) G. Espersen.

February 18, No. 7, pp. 193-224

153 Korsakoff's Psychosis from Brain Tumor. (Et Tilfælde af Tumor cerebri med ualmindelige psykiske Symptomer.) F. Friedenreich.

151. Influence of Endogenous Factors on the Type of Progressive Paralysis.—Neve has found twenty-seven cases on record in which patients developing progressive paralysis had had some psychosis in previous years. He has encountered four cases of the kind, and is inclined to regard the paresis in such cases as a concomitant affection, superposed on the old mental disease rather than that the paresis was of a special manic-depressive type. He thinks that dementia is the main feature in progressive paralysis, and that any other type of mental derangement is not due to the paresis itself, although the latter may arouse an otherwise latent predisposition.

152. Cancer in Undescended Testicle.—Espersen has found records in the literature of twenty-nine cases of this kind to which he adds one of his own. His patient was a man of 22 released from military service on account of left inguinal hernia, never requiring a truss. He had three attacks of appendicitis in the last year, but was otherwise apparently healthy until he began to feel weak and experience pain in the right iliac fossa. He lost 17 pounds in weight in the course of three or four months. The scrotum was empty and a tumor could be felt in the iliac fossa. The enlarged testicle was removed and proved to be transformed throughout into carcinoma tissue. In the 19 cases compiled by Blanck, the correct diagnosis had been made only 6 times; in some cases the operation had been done for supposed appendicitis. Among the 29 cases, 11 of the men were between 20 and 30; 11 between 30 and 40 and 5 between 40 and 50. The microscope showed a round-celled sarcoma in 12 cases and a carcinoma in four. Complete recovery is known only in 2 cases nearly three years after the operation; one was a mixed tumor, the other a sarcoma, both quite large. All the 4 carcinoma patients died. The later fate of a number of patients is not known. Neve thinks that the operation should be along the lines of those for mammary cancer, and that prophylactic Roentgen exposures afterward may be useful.

Hygiea, Stockholm

February, LXXVI, No. 3, pp. 131-191

154 *Diverticulitis and Sigmoiditis. R. Dahl.

154. Diverticulitis and Sigmoiditis.—Dahl reports a case in detail and discusses the history of these affections and the complications which they may entail. He says that diverticuli are usually multiple; up to 400 were encountered in one case. They are more common in men, and after the age of 40. The youngest case on record was in a child of 7. Their development is favored by corpulence, by much loss of flesh after being corpulent, by meteorism, by great fluctuations in the blood-supply, and by congenitally weak muscles. The complications may present various pictures according as the lesion induces inflammation around, with or without perforation and peritonitis, adhesion with neighboring organs, the bladder or genital organs, with torsion of the intestine or fistula. Cancerous degeneration has been reported in 8 cases on record (Hochenegg and Mayo).

Ugeskrift for Læger, Copenhagen

February 12, LXXVI, No. 7, pp. 269-314

155 *Necropsy with Heart-Block. (Tilfælde af Adams-Stokes Syndrom med Sektionsfund.) O. V. C. E. Petersen and H. C. Hall.
156 *Hour-Glass Stomach. (Om Timeglasventrikel i Anledning af en Række opererede Tilfælde.) A. Pers.

155. Necropsy with Heart-Block.—In the case of Adams-Stokes syndrome reported, a large calcium concrement was found compressing the bundle of His. The patient was a man of 55, who had had acute rheumatism as a young man, but there had been no signs of heart trouble until thirty years later.

156. Hour-Glass Stomach.—Pers analyzes 18 cases; a tumor could be felt at the cardia in 4 and the lesion was adherent to the abdominal wall in 2. In 8 of the total cases there was a crater-shape ulcer; in 3, shallow ulceration. Residue was found after an abnormally long interval in only 8 of the patients; this absence of retention was responsible for the delay of the proper diagnosis in some of the cases. All the patients were supposed to be cured, but recent reexamination showed that trouble had returned in 5 of the 13 patients given palliative treatment for an ulcer in the lesser curvature. The results were a little better with gastro-gastro-anastomosis than with gastro-enterostomy. He is inclined to advocate resection as the better and safer procedure, while the danger with it is scarcely more than from the palliative methods. The details of his 18 cases are tabulated for comparison, the ultimate outcome showing up better on the whole after resection.

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CONSERVATIVE OPERATIVE TREATMENT OF LONG-STANDING INVERSION OF THE UTERUS *

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ST. LOUIS

From the time of Hippocrates, who wrote clearly of this condition, to the modern era, inversion of the uterus was treated principally by elevation of the lower part of the body and pressure on the protruding mass — that is, by posture and taxis. At first, posture seems to have been most emphasized, while later taxis, in its various forms, was more largely depended on.

In the long-standing cases, however, this treatment was only occasionally successful. Most of the women who survived the primary shock and the hemorrhage of the first few months dragged out a miserable existence, and finally succumbed to anemia or chronic sepsis. The repeated and prolonged taxis, so persistently employed, often aggravated the symptoms and hastened the end.

As early as 50 B. C., Themison suggested amputation of the bleeding and sloughing corpus uteri, stating that he did not believe that the uterus was essential to life. One hundred and fifty years later the suggestion was put into practice by Soranus, who amputated a gangrenous uterus and the patient survived. From that time on, amputation of the bleeding corpus uteri was the usual treatment in those cases which resisted non-operative measures. In more recent years complete hysterectomy (by vagina) was substituted, in the comparatively clean cases, for the simple amputation of the corpus uteri. At present hysterectomy is, I think, the treatment most commonly employed in the long-standing cases. In some of these patients, particularly in those past the age of 35, amputation or hysterectomy is the best treatment. In other patients, however, especially in younger women, sacrifice of the uterus is not the best treatment. In such patients, preservation of a functionating uterus is very important and may be attained through a conservative operation. It is this phase of the subject that I wish to emphasize.

Conservative operative measures, that is, measures for the reduction and preservation of the uterus in the cases that resisted pressure replacement, have been developed only within the last half century. Aran, in 1858, and Marion Sims a few years later, suggested incision of the fibers of the constricting cervical ring, but it is not certain that either of them actually used the method. The first recorded use of this treatment is by Robert Barnes, in 1861. In a case of inversion of six months' duration, he made three incisions in the constricting cervical tissues. The incisions extended deeply enough into the tense cervical ring to relax it, when taxis was applied and the inversion easily reduced. In this method, as used by Barnes and others, the peritoneal cavity was, of course, not opened. On account of the danger of sepsis in those days, much care was exercised to avoid cutting through into the peritoneal cavity — hence the employment of multiple incisions to avoid too deep cutting at any one point.

The next radical step was the attempt to stretch the constricting ring by means of a dilator introduced through a median abdominal incision. In 1869, Thomas reported a case so treated. He experienced great difficulty in executing the work in the friable infiltrated tissues of the long-standing inversion, and in a second case the attempt proved fatal. The method was exceedingly dangerous and only fairly successful, as indicated by failure in nearly half of the cases. In employing this method in 1899, Everke aided reduction by superficial incisions into the constricting ring from the peritoneal surface.

In 1883, Browne employed an equally effective and much safer method of dilating the constricting ring. He made an incision through the posterior wall of the inverted fundus uteri, into the inverted peritoneal pouch. Through this opening, about 1½ inches long, a dilator was passed up into the constricting ring which was then dilated. After careful and full dilatation, the uterine incision was sutured and then the inverted fundus uteri was replaced by taxis.

Küstner (1893) made a long incision in the posterior uterine wall from near the fundus to near the external os. He first opened the posterior culdesac by a wide transverse incision, broke up any adhesions present and then incised the posterior uterine wall as just mentioned.

Following a suggestion by Piccoli in 1894, Morisani, in 1896, extended the incision up the posterior wall through the external os, thus giving complete division of the posterior uterine wall, which facilitated reduction, in the old cases with infiltrated, sclerotic walls.

Spinelli, a few years later, incised the anterior vaginal vault, opened the vesico-uterine peritoneal pouch, and then divided the anterior uterine wall from the external os to the top of the inverted fundus. This anterior division gives as much facility in reduction in difficult cases as the posterior division; and, being anterior, it possesses certain distinct advantages.

Haultain, in 1901, attacked by the abdominal route an inversion of nine months' duration; but instead of depending on dilatation of the ring, as did Thomas, Haultain incised the constricting ring posteriorly. The

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* Read at the annual meeting of the Western Surgical Association, St. Louis, Dec. 20, 1913.

incision was gradually extended in the corpus uteri, as more and more of the inverted portion was pushed up within reach, until finally reposition was effected. The replaced uterus presented a posterior incision about 1½ inches in length, which was securely sutured from the peritoneal surface. The patient made a rapid recovery.

A few years later, Dobbin employed anterior incision of the constricting ring. It was a recent inversion complicated by sepsis. Taxis failing, he opened the abdomen and endeavored to dilate the constricting ring after the method of Thomas. This failed completely. Then an incision was made in the anterior margin of the inversion funnel. This passed through the entire thickness of the uterine wall and was extended sufficiently to permit replacement of the corpus uteri. The patient died some days later of the progressive sepsis.

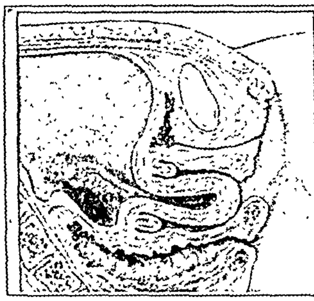
Fig. 1.—The inverted uterus, showing the changed relations.

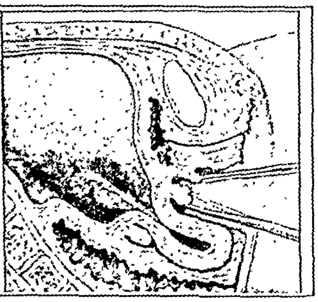
Fig. 2.—Beginning the operation for reposition (Spinelli method).

In brief the conservative operations for inversion of the uterus have been as follows:

OPERATIONS FOR REDUCTION OF AN INVERTED UTERUS

1. Multiple incisions into the constricting cervical ring (Aran, Sims, Barnes, 1861).
2. Dilatation of constriction ring by dilator introduced through an abdominal incision (Thomas, 1869; with incisions, Everke, 1899).
3. Dilatation of constriction ring by dilator introduced through incision in fundus uteri (Browne, 1883).

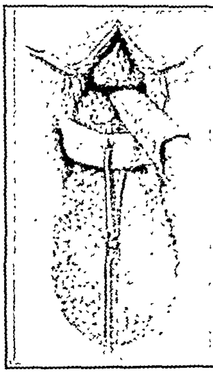
Fig. 3.—Separating the bladder from the cervix.

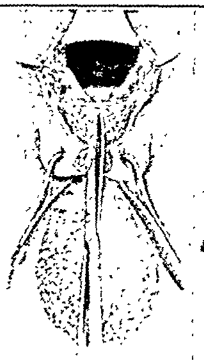
Fig. 4.—The peritoneum opened, exposing the inversion-funnel. Division of the cervix begun.

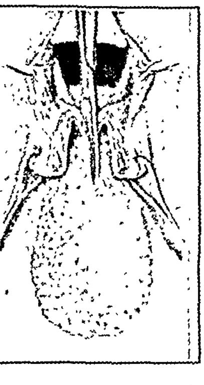
Fig. 5. — Cervix and constriction divided, and the incision being extended down the inverted corpus uteri.

4. Division of constriction ring and adjacent uterine wall and cervix, posteriorly (Küstner, 1893).
5. Complete division of posterior uterine wall and cervix (Piccoli, Morisani, 1896).
6. Complete division of anterior uterine wall and cervix (Spinelli, 1900).
7. Division of constriction ring posteriorly through an abdominal incision (Haultain, 1901).
8. Division of the constriction ring anteriorly through an abdominal incision (Dobbin, 1905).

Vaginal operation is by far the safer plan. Complete division of the anterior wall of the cervix and corpus uteri (Spinelli method) is altogether the most satisfactory method and the one I would strongly recommend in long-standing cases. The details of the method are conveniently shown by describing a case. The case reported is of interest also because of the seriousness of this affection and its extreme rarity.

REPORT OF OPERATION BY METHOD OF SPINELLI

Mrs. B., aged 23, operated on Feb. 7, 1913, for complete inversion of the uterus, of a year's duration, had been delivered of her first child Feb. 2, 1912. The labor was normal except for adherent placenta, which was removed manually. There was free bloody discharge and much cramping pain, which became less after six weeks. Bloody discharge continued off and on during the summer. The patient, though weak, nursed the baby and was up and about most of the time. In the fall the bleeding became worse and finally, in the winter, the patient consulted Dr. H. S. Brookes, who examined her and made a diagnosis of inversion of the uterus. When I saw the patient, in consultation with Dr. Brookes, she was weak from chronic loss of blood, and presented the exsanguinated, waxy appearance so characteristic of profound anemia.

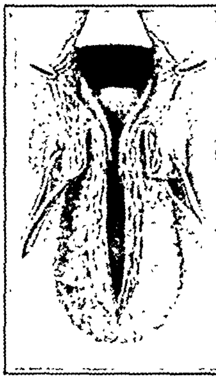
Fig. 6.—The incision extended to the fundus, as found necessary for reposition.

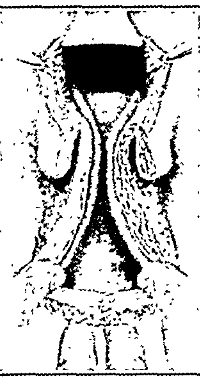
Fig. 7.—Turning the uterus inside in again. First step.

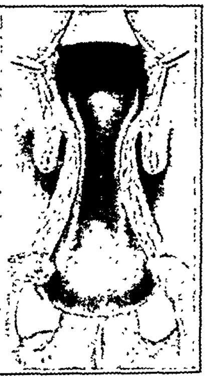
Fig. 8.—The turning almost completed. Peritoneal surface becoming external and mucous surface becoming internal.

After preparatory treatment, to improve the patient's condition as far as possible, the inversion was operated on by the Spinelli method, as follows:

1. After disinfection of the vagina and inverted corpus uteri, the anterior vaginal fornix was incised and the bladder separated from the uterus (Figs. 1, 2 and 3). The vesicouterine peritoneal pouch was then opened and the opening was widened laterally by the fingers, thus exposing the inversion funnel, as shown in Figure 4. Here there were numerous adhesions binding together the peritoneal surfaces, but the adhesions were easily separated.

2. The cervix was then divided anteriorly up to the constricting ring (Figs. 4 and 5), and the incision was continued down the anterior wall of the corpus uteri (Figs. 5 and 6). At various stages of the incision the attempt was made to turn the uterus inside in, but this could not be done until the incision was extended to the fundus.

3. The mucous surface of the uterus was then turned in by hooking the forefingers into the incision and rolling the peritoneal surface out while the two thumbs, making counterpressure, indented the mucous surface and pushed it in, as indicated in Figures 7 and 8. Considerable stretching of the shrunken and infiltrated peritoneum was necessary at this stage of the work.

4. The thickened uterine wall was then trimmed away sufficiently to permit approximation of the peritoneal portion of the uterine incision. The turned-out endometrium and adjacent muscular wall had become greatly infiltrated and thickened, and consequently a considerable portion of this wall, amounting to about one-fourth of the entire uterus, had to be cut away as indicated in Figure 9. This reduced the bulk of the uterus so that the shrunken peritoneum could be approximated around it.

5. The incision in the uterus was then closed by deep and superficial sutures (Figs. 10, 11, 12 and 13). The deep sutures included most of the thickness of the muscular wall, but missed the endometrium and the peritoneum. Over these deep sutures and burying them, was placed a superficial suture which approximated the peritoneum, care being taken to fold in the peritoneal edges.

6. Drainage was instituted. Free drainage is important in these cases because the chronically infiltrated and infected uterine wall cannot be wholly disinfected, and hence the incisions and manipulations spread contamination about the field. Marked absorption and fever for some days after operation is the rule in these cases, and in some cases the temperature is alarmingly high and persistent.

In this case tube-drainage was employed posteriorly, through a culdesac opening (Fig. 14), and a rubber-tissue drain anteriorly. In a similar case I would now use a tube-drain anteriorly as well as posteriorly (Fig. 14), to afford immediate exit to any contaminated fluid that otherwise might accumulate in the vesico-uterine peritoneal pouch.

7. The vaginal-section opening was closed, with drainage, and a vaginal packing put in to keep the cervix well back and the fundus forward. It is important to take steps to keep the uterus forward during the healing process. If the tendency toward backward displacement is marked in the replaced uterus, it should be fastened forward by one of the vaginal operative methods. If there is no special tendency backward, a packing or pessary for some days will be sufficient.

Following operation, the patient had considerable fever. The first day the temperature was 103 F., the second day 102.4, the third day 102.6.

This persistent fever was of course disquieting, on account of the possibility of a spreading peritonitis or of generalized venous infection (pyemia). These dangers had been taken into account when I decided to save the uterus, and I had then determined that if serious infection developed after operation I would do a vaginal hysterectomy, to remove the infected organ and establish free drainage. It looked for a time as though a serious infection might be developing, but it did not develop. The fever was the only disturbing symptom. There were no evidences of serious peritoneal irritation, so I felt safe in waiting. The fever gradually subsided in the course of ten days, and the subsequent convalescence was uninterrupted.

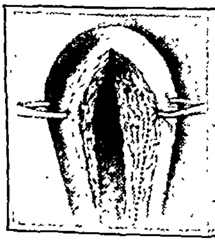

Fig. 9.—Turning completed. Dotted line indicates portion it was necessary to excise on each side, to permit approximation of peritoneal edges.

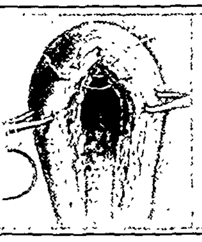

Fig. 10.—Closing the uterine incision. One of the deep sutures for the muscular portion.

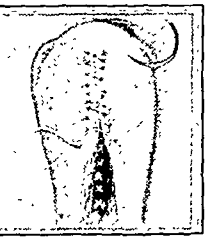

Fig. 11.—Closing the uterine incision. The superficial suture for the peritoneal portion.

The high temperature was probably an absorption-temperature, due largely, if not entirely, to the disturbance of the infiltrated uterine wall. There was not only an incision through the infiltrated wall but also a general shifting of the relation of the elements of the wall by the forcible turning of the uterus inside in again. That this general shifting of the elements of the wall is an important factor is indicated by the fact that marked rise of temperature has been noted in cases of reduction by taxis without incision.

The patient gained strength rapidly, iron of course being given to overcome the marked anemia due to the previous chronic blood-loss. Menstruation began in April, the second month after the operation, and has been regular since. The first two or three times the flow lasted only two or three days and was scanty. Since then it has been normal—from three to four days and a good flow, but not excessive. The patient states that the menstruation is the same now as it was before she became pregnant, except that the pains she formerly had do not now appear. The general health is good and the patient feels well and strong and is as active as ever. On examination recently, the uterus and other pelvic organs appeared practically normal.

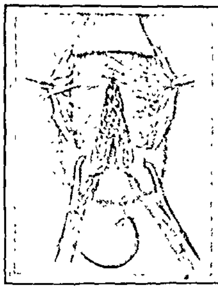

Fig. 12.—Closing the cervical incision.

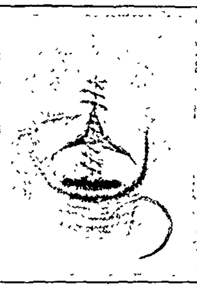

Fig. 13.—Closing the vaginal incision.

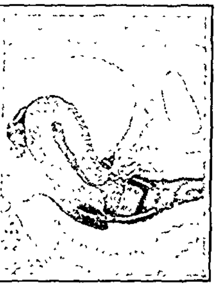

Fig. 14. — Free drainage. Tube-drain in posterior peritoneal pouch and in the anterior pouch.

ADVANTAGES OF THE METHOD

The advantages of the method employed are the following:

1. Being vaginal, it minimizes the amount of peritoneal contamination, a most important consideration when dealing with an infected structure.

2. As the reposition is accomplished by incision, there is not the bruising and perforation of the friable uterine wall which has so often accompanied attempted reposition by dilatation of the constriction-ring.

3. Division of the anterior uterine wall is preferable to division of the posterior wall, because the work is thus more easily and accurately accomplished. The anterior uterine wall and anterior fornix lie toward the operator, and hence are less deeply situated and more easily reached. Again, when the operation is anterior, the bladder may be lifted away, giving a wide space for investigation of the inversion-funnel and of the various pelvic structures, and also more room for the operative manipulations of incision, reposition and suturing. Again, if there is a marked backward tendency, effective forward fastening of the uterus may be carried out through the anterior incision. Again, a suture-line on the posterior surface of the uterine wall extending to the fundus is more likely to form troublesome adhesions — to the intestines, leading to obstruction, or to the posterior pelvic wall, leading to adherent retrodisplacement.

The points in favor of the posterior incision are that it eliminates the extra opening for drainage and that the sacro-uterine ligaments may be more conveniently shortened; but these minor advantages of the posterior incision are outweighed by the more important advantages of the anterior incision.

Metropolitan Building.

SPINAL TRANSPLANT *

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This article was suggested by Dr. E. Wyllys Andrews, and is a plea for fair judgment, favorable or unfavorable, of the autobone transplant of Dr. Albee for tuberculous spondylitis.

The treatment of tuberculous vertebrae by the nonoperative method in the hands of most orthopedists terminates satisfactorily to the patient and to the surgeon in those cases which he can keep under control for a long period of time — say two or three years. There are cases, however, in which future health and bread-earning ability depend on:

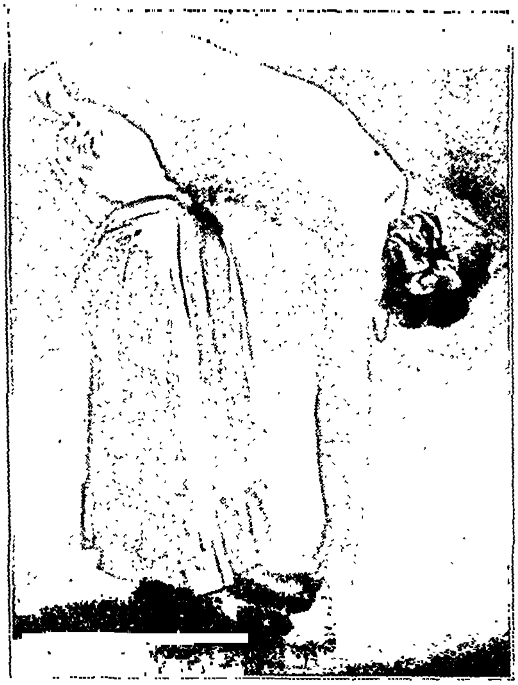

Fig. 1.—Patient bending and touching the fingers to the floor. Notice the stiffness and absence of gradual even curve in this back. Compare with Figure 2, a normal back.

1. Such control as the operative method seems in some instances to give.
2. A shortened period of recumbency which in a number of my cases has apparently been due to the added support of the bone splint. It is only fair to give the facts regarding the results, good and bad, of the work in this field, to those who may help to judge of the merits and disadvantages of such treatment, and it is hoped that those who have operated in one or two cases with unfavorable results will not consider worthless this new, under-the-skin splint before they have the data of many cases, based on observations extending over some years.

Many adults frequent the hospital at ages ranging from 30 to 45 years whose history is much like the following cases and whose condition is due to what I call lack of control sufficient to establish and continue treatment to firm ankylosis, which means a working physical condition.

Case 1.—A woman aged 39, who appeared much older, gave a history of painful and deformed back since girlhood, and related many periods of illness which confined her to bed and prevented school attendance and work. She always insisted that she was well as soon as the recumbent position, cast or brace had eased the back pain, and it was impossible to continue treatment at any one time more than two months. Extreme emaciation and multiple sinuses are the results. We should ask ourselves if operative measures would have established control in this patient in her youth and prevented, at least in an indirect way, the invalidism she has carried for life.

A second case will further illustrate what I mean by control.

Case 2.—A girl aged 14, who had been under treatment in recumbence, cast and brace, at various times for two years, each time left the hospital, discarding cast and brace in the face of every effort to the contrary, and returned each time only after she was unable to work longer. During one stay in the hospital she developed a condition diagnosed as tuberculous meningitis, but recovered, and I therefore doubt the diagnosis. At her last appearance at the hospital, she was prepared for operation the day she entered, the operator reasoning that her only hope to escape the fate of Patient 1 was in this procedure. Otherwise, the comfort of a Bradford frame would have influenced her to walk out of the hospital prematurely. Chest examination revealed pulmonary tuberculosis. The Roentgen ray showed caries of the bodies of the sixth and seventh dorsal vertebrae, and there was slight angular kyphosis and very painful, rigid back. She was operated on, kept in bed three months, and allowed to be up and about without support at the end of four months.

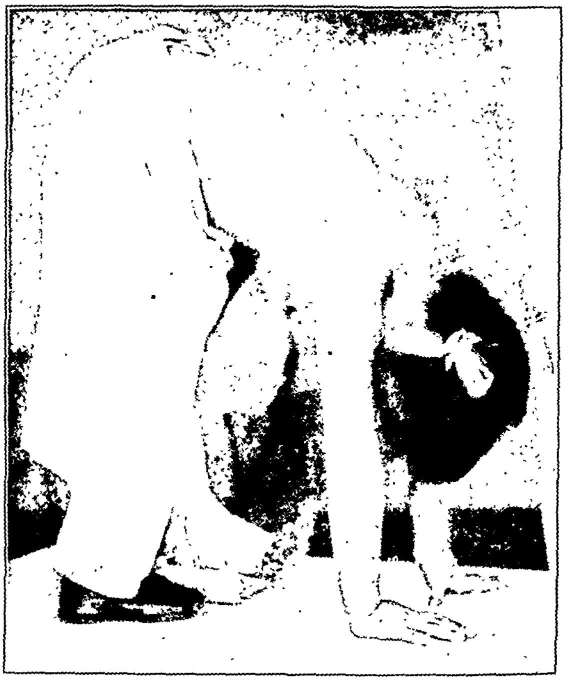

Fig. 2.—Normal back showing the gradual, even curve, unlike that in the grafted spondylitis, as in Figure 1.

Technic of Operation.—An iodin preparation was followed by an 8-inch elliptic incision including the fourth, fifth, sixth, seventh and eighth dorsal spinous processes, which were split and fractured at the base with knife and chisel, about one-third their thickness being turned down. The soft interspinous tissues were hollowed out, so as to form a groove 5¼ inches long, ¾ inch deep and ½ inch wide for implantation of a section of the tibia. Bleeding was controlled by means of hot sponges.

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* Read before the Chicago Medical Society, Jan. 30, 1914.

An elliptic incision was made over the left tibia about 5 inches in length, the anteromedial surface of the tibia bared, and the tibialis anterior muscle pushed outward ⅓ inch. Incisions were made through the periosteum lengthwise for 5¼ inches on each side of the anterior border of the tibia, the periosteum included, and a wedge-shaped section of the bone 5¼ inches long by ½ inch deep was excised. This transplant was then cut transversely in three or four places to allow it to be bent easily, and a hole was drilled in both ends.

Strong catgut on an aneurysm needle was introduced through one side of the split fourth spinous process, then through the drilled hole in one end of the transplant, and thence through the other section of the spinous process, thereby securely anchoring the upper end of the transplant between the split spinous processes. The other end of the transplant was secured in the same manner, and made to fit into the groove between the split spines. This groove was made slightly to the left of the median line. The transplant was then covered over by the paraspinous tissues, the suturing material being heavy chromic catgut. Tension sutures of silkworm gut were used to close the wound and the skin approximated with Michel clips. Dry dressings were applied with a circular pad of felt, preventing pressure on the incision. The leg incision was closed by means of fine catgut for the periosteum and black silk for the skin. As soon as the patient was removed from the operating-table, and before she recovered from the effects of the ether anesthesia, she was placed on a Bradford frame.

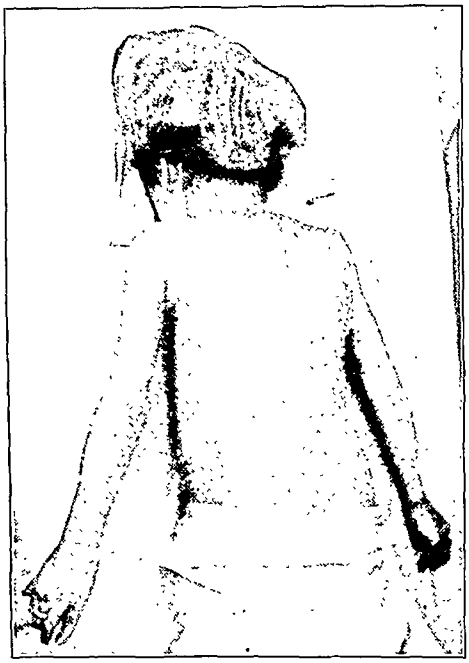

Fig. 3.—Case showing knuckle in high dorsal region, but on account of the prominent knuckle best adapted for Albee's method of operation.

VARIATIONS IN TECHNIC

The elliptic incision over the tibia should not be used for the back operation. It has obvious advantages, but, over the tibia, it has no place. Here, the best technic, for comfort, shortness of incision, least disturbance of muscle and perfect healing, is to incise directly over the anterior border of the tibia, dissect the muscle back slightly on the outer border, protecting the periosteum, mark out the size of the bone by cutting down on it through the periosteum, according to the measure obtained from the back; then this bone should be either sawed or chiseled out, leaving the periosteum intact. It will be found that, in the young patients, one accustomed to chiseling the bone out finds this a quicker and more satisfactory way than sawing. The ends and that part of the graft — usually the middle — which is embraced by the split halves of the most prominent process in the knuckles, should be very deeply and firmly fixed to secure the best results; otherwise, the ends spring up so that in some of the cases the finger could work the skin of the back under the ends of the graft. This aids absorption to take place before bone formation begins. The best fixation I have succeeded in obtaining has been by kangaroo tendon passed through the holes bored in the ends and middle of the graft. Pegging with autobone or ivory pegs has not been so satisfactory. Silk may, in the end, cause increased ankylosis by the irritation following slight infection and expulsion, and the kangaroo has given the best results in this series of cases. Regarding the postoperative position, the Bradford frame has been used with satisfaction in all but two cases. Patients, however, are comfortable on the chest-abdomen, but do not get the same tendency toward hyperextension, reduction of the kyphosis and relief of the vertebral pressure. The addition in the back position of a well-fitted felt pad around the kyphosis adds the advantages of the chest-abdomen position.

Case 2.—*Later Report of Condition.*—Following the operation, the patient's condition, probably because of the lung tuberculosis, was very uncomfortable; the pulse was fast and weak at first; later, better, and after two days the prospects were gratifying. From now on her condition could be compared favorably with that of most patients following a major operation. The absence of pain, considering the double operation and the length of incision, was noticeable. Each wound healed perfectly; the slight kyphosis is now absent, and motion is painless and increased above and below the graft, so that, standing with stiff knees, she puts the fingers of both hands on the floor (Fig. 1).

Again we must ask ourselves, is not this patient, at five months after operation carrying a bone splint which she cannot remove, and having increased fixation, a better risk than she would be with only the recumbency treatment for the same length of time?

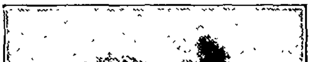

Fig. 4.—Case with prominent knuckle in lower dorsal and lumbar region, best suited for the Albee method of operation.

SHORTENED PERIOD OF TREATMENT

Albee, to whom great credit is due in this work, disregards mechanical support after the operation, and gets his patients up early. This may be a safe procedure when a heavy bone splint has been deeply and securely placed between the split spinous processes, and the bodies of the vertebrae thus held apart without the aid of callus between and around them; but the trunk is so heavy, the splint so small in comparison with the weight it must bear, and its leverage at such a disadvantage, that in this series of cases the splint has been looked on only as a temporary support, aiding the recumbent, brace-cast treatment, while heavy callus fills in about the vertebrae, supplying the finishing touch to ankylosis. Therefore, the patients whom I mention and whose cases I report have been given from three to ten months' support after the operation, on the supposition that if the treatment is continued for even as long as eighteen months, the time of the average non-operative treatment has been cut down about one-half.

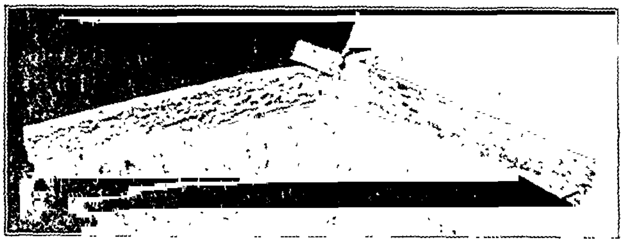

Fig. 5.—Broken transplant (Case 6) tied with kangaroo. The kangaroo should go through holes made in each side of the split spinous process of the most prominent diseased vertebra.

SELECTION OF CASES

In this series of cases, no attempt was made to choose the good risks, operation being performed as each case was presented for treatment.

Factors which should be considered in selecting cases for operation are:

1. The general vitality of the patient.
2. The age.
3. The position of the disease in the vertebral column.
4. The amount of bone destruction.
5. The amount of callus formation.
6. The control of the patient.
7. The eagerness of patient and parent for shortened duration of treatment.

1. The more vigorous in constitution, the better the risk, but it has been surprising how nicely, with the exception of one, each patient, among those whose condition was considered hopeless, stood the operation and convalesced to an improvement in the general condition.

2. The age of the patient is considered an important factor by some who fear that the graft *per se* may not grow, and may thus tend to deform the backs of those young patients whose spinal columns will continue to grow and, therefore, bow backward when held by an unyielding, non-growing graft. Believers in this theory would select only the adult spine for operation. Experiments are in progress to determine the growth or non-growth in length, of the graft, and reports are in preparation for June, 1914.

3. The position of the disease in the vertebral column is a contra-indication to operation: (*a*) in those cases involving the high dorsal and low cervical region if the knuckle is so sharp and high that the occiput touches it and prevents the necessary space for work, and (*b*) in those cases in which the disease is in the middle and upper cervical regions.

Selection of that operation which will best lend itself to the particular region diseased.—I am inclined to select the lower dorsal, lumbar and sacral regions as the most favorable field for the Albee operation, and the middle and upper dorsal and lower cervical regions for the Hibbs operation, on account of the advantage given by the length, thickness and angle of projection of the spinous process in the different regions. Probably the most favorable position as offered by the spinous processes for the Albee operation, as far as ease of preparing the bed and firmly placing the transplant are concerned, is that of the lumbar and twelfth; sometimes, also, the eleventh dorsal vertebra. In the Hibbs operation, when the base of a spinous process is fractured across, the end denuded and turned down into the space caused by the fractured base of the neighbor below, best results are obtained when the sixth and seventh cervical, and all the dorsal spinous processes, with the exception of the eleventh and twelfth, are selected. This is because their length and relative position to their neighbors makes them yield easily to the desired technic. When the kyphos is sharp and large, separating the spinous processes, the condition becomes more favorable for the Albee operation, even though the kyphos is in the dorsal region (Figs. 3 and 4).

4. When the amount of bone destruction is great, such help in ankylosis as comes from the graft is indicated more than in those cases in which the small bone destruction can more easily be replaced from the bodies of the vertebrae.

5. The amount of callus formation and its ankylosing effect is the greatest element in the cure of these cases, and when it is large and strong enough to hold the back firmly, there is no need for placing a bone graft.

6. The control of the patient, as already indicated in this article, should be an indication for operative treatment in those cases in which the patients themselves or through their parents persist in discontinuing treatment early, much before the callus from the bodies of the vertebrae has had time to back up the support of the bone graft.

7. Other things being favorable, the desire of the patient or the parents to cut down the mechanical treatment a year or even a year and a half should be an indication for the operation and the aid it gives in accomplishing this wish.

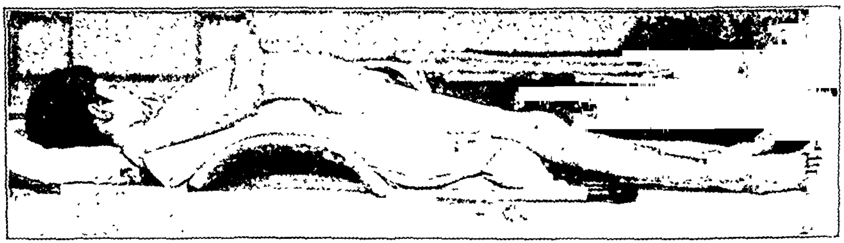

Fig. 6.—This patient is resting on a frame in hyperextension. The scar on the leg can be plainly seen. Michel clips were used but remained in place too long.

Among those cases, of this series of twenty-seven, which were so bad that the patients might have been denied operation were the following:

Case 3.—A boy, aged 4, with an active tuberculous hip complicating a tuberculous spondylitis which included the fifth, sixth and seventh dorsal vertebrae, and a discharging sinus 2½ inches to the left and on a line with the tenth dorsal vertebra, progressed splendidly. Following this operation he had only slight after-pains, no complications, clean wounds not damaged by the nearby sinus, and marked improved general condition. His kyphosis decreased in prominence because of the hyperextension on the frame, but no more than would have occurred without the operation. The patient was dismissed from the hospital early, and was allowed up with no support. Nine months after the operation, the kyphosis is increased; the sinus is closed.

CASE 4.—A boy, aged 16, poorly nourished, with marked spasticity of the legs, an ulcer about as large as the palm of the hand at the middle third of the right leg, eczema of the back, and incontinence of urine, was operated on in the manner described, except that the ends of the graft were anchored with silk instead of catgut. The wounds healed nicely in the presence of the eczema; the bladder condition improved, and the spasticity appeared at first not so marked. Later, pieces of silk came away, and five months after the operation he continues a bed case; spasticity is not improved; the general condition is improved.

CASE 5.—A man, aged 35, came to the hospital with lumbar Pott's disease, and while there, fell and injured his back. Later, he developed a spasticity of both legs, but was operated on in the usual way. The wounds healed by first intention; the pain in the back has continued; the kyphosis has decreased, but has been pushed to the right, producing a scoliosis. A prominence over the left ribs, resembling the bulging which accompanies the rotation of the vertebrae in scoliosis, has developed. Diagnosis of complicating sarcoma, following the fall, has been made in this case. The patient continues confined to bed, six months after the operation, and is worse.

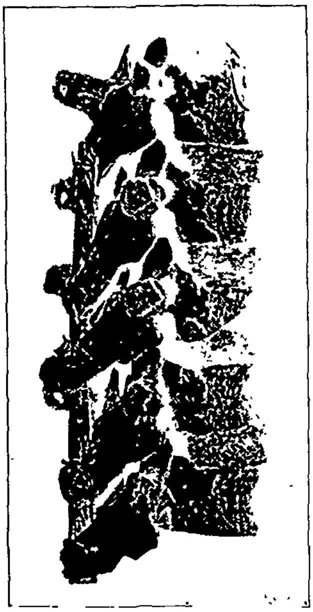

Fig. 7.—A dry transplant holding five dry vertebrae together. The saw cuts allowed some bending of the transplant. This picture gives a good idea of what we try to do in the Albee method of operation.

CASE 6.—A boy, aged 14, with a very marked kyphosis and much lateral bending, unable to stand or sit unaided, was operated on in the usual manner, with this difference: the heavy splint was accidentally sawed through at its middle point, while weakening it with saw cuts so as to bend it to fit the knuckle. The graft was long enough to allow each end to be shaped for mortising, then a hole was drilled through the split sides of the spinous processes and through the mortised ends of the graft, and fixed by kangaroo tendon (Fig. 5). A small pressure sore developed over the most prominent part of the knuckle and graft, but healed in two weeks. Three weeks after the operation a nephritis developed which cleared up nicely on a milk and lime-water diet. The kyphosis is reduced, but hardly more than would be expected from the hyperextension maintained after the operation; there is more support in the back, and the patient can sit up better than he did before the operation. Considering the loss of bone in this case, the operative support should be given its share of credit for the improved condition.

CASE 7.—A girl, aged 9, with a positive neisserian infection, and a marked knuckle of the upper dorsal vertebrae, was operated on in June, 1912. She did badly from the beginning, was unable to stay on the frame, was uncomfortable all the time in any position, and finally, two months after operation, contracted sore throat, followed by pneumonia, and died at her home, after being removed from the hospital by her parents without hospital consent. An examination was refused.

CASE 8.—A man aged 32, with a marked kyphosis, treated for months in recumbency at a hospital, and discharged when spasticity of the legs developed, was received as a stretcher case and operated on in the usual way. When he was turned to examine the back on the third day after the operation, a bed-sore was discovered over the sacrum. This case was not improved, six weeks after the operation.

CASE 9.—The oldest patient operated on was a man aged 49 who had been unable to work for thirteen months. He experienced remarkably slight pain, and was more comfortable after the operation than before. This patient was kept on a frame for three months, wore a cast for seven weeks, and left the hospital and returned to work, with no support, six months after the operation.

CASE 10.—The youngest patient operated on was a boy aged 2, with involvement of the upper dorsal vertebrae, the graft including the sixth and seventh cervicals. This patient is doing well, and is up and about with a cast one month after the operation. The kyphosis has decreased, and the general condition and the prospects for a firm and early ankylosis are better, in my judgment, than if the operation had not been performed.

The favorable cases, with the exception of Case 2, have not been reported.

TENTATIVE CONCLUSIONS

Experience with this group of cases justifies the following tentative conclusions:

1. The operation is not severe. It is a double operation, and the length of incision is longer than in most operations, yet the recovery from the immediate effect is quick and the suffering is small.
2. Cases with discharging sinuses near the field of operation should not be refused operative treatment on account of the sinus, unless it lies within the field of incision.
3. Complicating pulmonary tuberculosis is not a contra-indication in all cases.
4. If the ends of the transplant are loose, they absorb. If they extend beyond the spinous process, that portion not attached will absorb back to the firm attachment.
5. Loose ends and broken ends, as in the middle of a bent graft, grow, when later, through fixation by position and quiet, they become attached.
6. The three cases complicated with Pott's paraplegia have not markedly improved. The longest time elapsing since the operation of a paraplegia case has been six months. During this time the position has been good, and such as to give hyperextension.
7. The young patients do better than the adults.
8. The operation has a distinct place in the treatment of selected cases of tuberculous spondylitis.
9. Albee's method of operation is preferable in the large majority of cases on account of the location of the disease and the size of the kyphosis.
10. Operative treatment should be followed by months of perfect quiet for the transplant.

Credit is due Drs. Stoland, Packard, Boren, Callentine and Dawson for aid in histories and operations, some of which were performed by them; and to Drs. Hartung, Hubney, Van Horn and Case for painstaking work with roentgenograms.

31 North State Street.

Before Asepsis.—Sir Hector Cameron gave the following brief description of the days when Lister first went to Glasgow: "Every wound discharged pus freely, and putrefactive changes occurred in the discharges of all"; and again: "Secondary hemorrhage, tetanus, erysipelas, septicemia, pyamea and hospital gangrene were never all absent from the hospital wards, and at times became alarmingly *epidemic*.—Wrench, G. T.: Lord Lister, His Life and Work.

METHODS OF EXAMINATION OF ILLITERATES FOR MENTAL DEFECTIVENESS

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The examination of an illiterate person for the purpose of determining his mental capacity is often difficult. To distinguish between ignorance and feeblemindedness is by no means easy. Many of the elaborate and complicated tests for measuring the intellectual ability are clearly inapplicable and we cannot use them. All mental processes which obviously depend on education or special training for their development are at once ruled out, and by a careful analysis we find that many of the usual tests recommended require these educated and trained faculties on the part of the subject. We are here working on what, from a pedagogic point of view, is virgin soil, which, no matter how rich or how poor it may be, has never had the benefit of any cultivation.

There are two general methods of examining uneducated mental defectives: 1. Ascertaining the amount of acquired knowledge which their minds contain. 2. Attempting actually to test their various mental activities.

EXAMINATION FOR ACQUIRED KNOWLEDGE

In the first we go on the assumption that a normal person in a given environment will in spite of himself, so to speak, acquire and retain a certain amount of knowledge concerning the ordinary affairs of every-day life. Thus a farmer's boy ought to know the seasons for sowing and reaping of crops, the amount of yield from an acre, the quantity of milk a cow can give, how long it takes a chicken's egg to hatch, the process of making butter, etc., and whether or not he has been to school. On the contrary, it would be unreasonable to expect a city-raised seamstress to be familiar with any of these things, but she ought to know the price of cloth, the amount needed to make a dress, the names of colors and materials, and to be able to figure the amount of her weekly wages. There would, however, be other matters with which both would be conversant, such as the number of hours in a day, the months of the year, the days of the week, etc. There are many facts which may properly be considered as items of common knowledge in all civilized communities, even among the most ignorant of the population. Among these are the name of the ruler, the seat of the government and the date and significance of the great religious festivals like Christmas and Easter. It is also to be expected that all persons who are employed should be able to solve the simple problems in arithmetic which arise in making purchases and giving change, and that they should know the value of the different coins and bills used in the community.

By such questions we gage a man's mental capacity by what he has absorbed and retained, and it is a perfectly reliable and accurate method; but it is open to the great objection that in many instances we cannot even approximately estimate what his environment has been. This is especially true of foreigners. What we are likely to consider matters of universal knowledge may be absolutely unknown to them on account of the extreme limitations of their surroundings. Thus we are surprised to find that a *half-grown* Irish peasant-girl cannot tell the time by a watch until we learn that the only article of the kind she had ever come in contact with was the clock in the village school which she had attended for a few weeks only. It is almost impossible for us Americans, living as we do in the most highly developed country in the world, to realize the narrowness of the lives of some of the poorer classes of the countries of Europe, much less that of districts still less favored. Some of these people live a life of sordidness and hard-working monotony almost beyond belief, and it results in a mental equipment which is correspondingly limited and stunted. Some of them cannot even repeat the names of the days in the week, and know the passage of time only by the ringing of the village church-bell on Sunday morning, which for them is the signal not to go to work. We find that many of the Irish immigrants from the remote districts do not know what year it is; yet how can we expect them to know the date when they have never owned a calendar? The farmer of southern Italy, tilling a few acres of land and living in a hut, whose bare walls contain only one ornament, the unframed picture of the Madonna, whose only possessions are a bed, a table, a chair or two, a few kitchen utensils, and a little bedding, can hardly be expected to define the word "charity." He has never been 50 miles from his place of birth. He could not go into a room in any of our houses and give the name in his own language for even a small part of the things he would see there, because he has never seen or heard of them before. His possessions, his ideas, his vocabulary and his experiences are all extremely limited, and he must be judged and measured accordingly. He is badly off, it is true, but yet more fortunate than some of the Porto Ricans or Filipinos.

Thus in determining feeble-mindedness in foreign races by measuring the amount of their acquired knowledge, a great deal of time and energy must be expended in deciding what are normal standards for each race and also for the various social and geographical classes in each country; and at best such standards are only relative.

EXAMINATION OF MENTAL ACTIVITIES

Confronted by this dilemma, we instinctively turn to some other method of examination and take up the other line along which an investigation of this nature may be carried out; that is, to test the actual mental ability of the individual independently of the amount of knowledge he may have acquired. Here again we at once encounter difficulties. The tests devised for measuring the higher faculties of the mind in the examination-room are largely academic and rather unsatisfactory evidence as to the way the subject will use his judgment or reason in solving the problems of every-day life. He may do better or he may do worse, and the "acid test" of intellectual endowment is not how skilfully he can talk, remember, reason or think in the abstract, but how wisely he will act when the real emergency arises and when fear, desire, greed, appetite and a host of other emotions are clouding the judgment. There was once a famous professor of therapeutics who year after year taught his classes not to pass a stomach-pump in cases of suspected strychnin poisoning; and yet when the case was at last actually brought before him in the presence of the class, he deliberately ordered the stomach-tube passed, and the patient immediately died of cramp asphyxia. Every one knows how unsatisfactory school examinations are to test the real ability, and the same thing is true of mental examinations as regards the higher faculties. Indeed, the division of the normal mind into its different parts has not as yet been perfectly accomplished by psychologists. Some of the mental faculties cannot be properly described or defined and many of the well-recognized divisions overlap and intermingle to a confusing degree and we cannot always decide exactly what powers are involved in performing certain acts.

With this understanding of the limitations which must of necessity apply to our results, some of the methods which may be employed will be discussed.

METHODS USED IN THE TESTS

The superficial memory and attention may be readily tested by repeating figures slowly and evenly to the subject and seeing how many he can remember after hearing them once. Normal adults can generally repeat seven disconnected digits without trouble.

The cube test is also very useful for this purpose. It consists in placing four or five ordinary wooden blocks of the same size and color in a row on the table before the subject. The examiner then touches the different blocks in a certain order and has the subject repeat the process. A large number of combinations may be made, testing the power of the attention and memory to a greater or less degree. Obviously, these are the only two elements involved in this test other than the semi-automatic train of mental processes which must of necessity accompany any purposeful act, but which are so elementary that they need not be considered as a part of the test; and the only information we get from the trial with the blocks is concerning the memory and attention. All writers on the subject are agreed that inability to control the attention is a marked symptom of most defectives; hence the cube test is an important one and, on account of its cheapness and simplicity, always available.

Judgment and reason are so interwoven that they are best examined together, and for this purpose a great number of tests have been devised.

In this connection it seems pertinent to make a few comments on tests in general. Every worker in this field has originated a number of devices of this order and all have earnestly sought for some one test by which it would be possible to separate quickly and accurately the defective from the normal. All investigators at one stage or another of their careers have hit on something which they thought was conclusive only to find that sooner or later cases appeared which upset their preconceived ideas on the subject. The human mind is too complex and intricate to be measured by such simple methods. Like an irregularly shaped solid, its total bulk cannot be limited by any one of its dimensions, and it is the sum total of the mental faculties which we must determine.

The purposeless multiplication and reduplication of tests and puzzles, without a definite and intelligent idea of the psychologic basis on which they are founded, cannot be productive of good results and only complicates our armamentarium and consumes time without giving any real additional information on which to form a judgment. The number of these tests is rapidly increasing, but the examiner will be wise if he uses only those for which an adequate explanation can be given and which plainly are not a repetition of the same thing in a slightly different form.

One or two puzzles which depend for their solution partly on the appreciation of different geometric forms and the comparison of the dimensions of empty spaces with solid bodies, as the Healy frame and the Fernald board, are distinctly useful, as the manner in which the subject attempts to solve them may throw considerable light on his general intelligence and also on his capacity to profit by previous errors.

Such puzzles (Healy) may be solved by using a very pure and high form of reasoning; but it is doubtful if ordinarily they are attacked entirely in this manner. It requires less mental effort actually to try the blocks in the frame in different positions in a haphazard fashion than to think out a plan of solution, and often the correct arrangement appears to be discovered by repeated trials rather than by reason. A very low grade of reasoning is required to complete the frame in this manner, the subject simply remembering the previous unsuccessful combinations so as to avoid repeating them. After it has once been worked out in this fashion, it is not difficult to repeat. In any event, too much stress should not be laid nor too much time spent in giving different puzzles of this sort, as some normal persons cannot do them in the allotted time and a few defectives seem to be able to handle them with ease. In conjunction with other data, they are quite valuable, however, and I think that they should be included in every examination as a routine measure.

To determine the ability of the subject to reason abstractly, to form correct judgments and to draw logical conclusions, a considerable number of methods may be used. All of these overlap, so they will be taken up together. It is intended merely to mention certain lines along which the examination may be conducted. Each investigator will modify them to suit his own individual ideas and the case before him, but the suggestions will show the principles involved.

The examiner may describe an imaginary situation, calling for a decision in which the subject is supposed to find himself, and then ask him what his probable action would be. Two examples will suffice:

The subject is told that he is shipwrecked and alone in a small boat many hundred miles from the shore. He has with him in the boat two boxes, one containing 50 pounds of bread, the other 50 pounds of gold. The sea is very rough and it is necessary to throw one of the boxes overboard to keep the boat from sinking. He is then asked to tell us which box he would discard.

He is told that his house is on fire and burning fiercely. There is time to make but one trip to the second story. When he gets upstairs he finds but two articles worth saving. One is a mattress, the other a large lamp. He must throw one out of the window and carry the other down. Which one will he carry down?

Certain premises may be stated and a false conclusion drawn and the subject asked if he concurs. For example, he is told that a young woman's body was found in a room cut into eight pieces. The police say that she committed suicide. Does he think that this is likely?

His ability to follow a simple syllogism in logic may be tested as follows:

I am taller than my sister. My sister is taller than my brother. Who is the taller, my brother or I?

In all hypothetic questions, it must be remembered that the imagination of the patient is in all likelihood extremely limited, and he may make the wrong reply because he is unable to picture the actual situation; but if the thing actually happened to him he would in reality take the proper course. This lack of the constructive imagination is very significant of feeble-mindedness, but its existence is rather difficult to prove. A test along this line may be attempted by carefully drawing an imaginary picture in which something not actually mentioned is perfectly obvious to any one who really can form the mental picture at all and then by indirect means ascertaining if he realizes the condition which has been purposely left out of the verbal description.

For example, he is told that he and a companion are shipwrecked in a small boat and floating on the sea. When they left the vessel which was destroyed they took with them two buckets of fresh water. Several days have elapsed since the accident and they have consumed all of the water in one bucket and it is empty. The other bucket is still full of the fresh water, their only supply. He suddenly discovers that his companion's coat is on fire. Will he pour the bucket of fresh water over him, or what will he do?

Obviously, if he can picture the situation at all, he will state that he will reach over the side and fill the empty bucket with salt water and use that, or he will take the coat off and souse it in the sea.

Another good question is to ask if in scrubbing a flight of stairs, he would begin at the top or at the bottom.

In all questions like the above in which two alternatives are offered, the reason of the choice must be given, because by simply guessing, the right answer should be given at least half of the time. It is also important to avoid all details which might add an element of confusion. Thus if we say: "I am taller than my brother and my brother is taller than my father. Who is the taller, my father or I?" we are very apt to get the reply, "Your father"; and if we ask why, the subject will say, "Because he is the head of the house," jumping to that conclusion without paying any attention to the conditions laid down.

The power to count and figure to a limited degree is extremely important and should be thoroughly investigated in every case.

We ask the alien to count from one to twenty and then backward from twenty to one or ten to one.

One can count backward by four different mental processes:

1. By successively subtracting one from the preceding number.
2. By reverse association of the numbers in their regular order.
3. By drawing a mental picture of the numbers in their regular order as they would appear on a printed page and then reading them from right to left.
4. By learning them backward and repeating them by rote.

Counting backward by any of the first three methods is a somewhat complicated mental act and shows considerable degree of mental development. If the subject fails at first but can be taught readily, it is very much in his favor, as the capacity to learn is the most important point in the diagnosis of ignorance from feeble-mindedness.

Counting backward by rote can easily be detected by extending the process, as the subject fails when taken beyond the point he has learned.

Simple sums in addition and subtraction should also be given, and if they cannot be solved in the abstract they should be given concretely as, How many legs have two horses? Two horses and one man? etc.

The copying of simple geometric figures as the square, triangle and diamond are excellent tests for illiterates.

The attention, comprehension, memory, judgment, reason and muscular coordination are probably all involved in this simple and convenient test, and it explores the mind from a rather different angle than any of the others and is an important factor, therefore, in the sum total of evidence which we must review in doubtful cases.

It would be impossible to discuss this subject without some reference to the Binet-Simon scale. The work of these investigators was very complete and the results extremely valuable for the population which they examined. A critical examination, however, of the tests employed will show that many of them depend on the ability to use words in definition and in stating comparisons. Such a power depends largely on training and not solely on native ability. In this respect the scale is clearly not applicable to illiterates, and experience in applying it literally to ignorant immigrants has amply demonstrated this fact.

A careful study of the Binet-Simon scale is extremely useful, and every one who undertakes to make examinations of mental defectives should be thoroughly familiar with it, as it forms an important foundation on which to build up a plan of examination suitable and especially devised for those who have had no educational training or the advantage of association with educated persons.

All the foregoing applies to the purely mental symptoms of amentia. There may be present in these cases disorders of the special senses, facial and other physical deformities, speech defects and muscular incoördination. These conditions are so frequently found in persons who are sound mentally that they have but little value in making a diagnosis in the milder degrees of defectiveness. Of course the idiots and some imbeciles generally present some physical signs which immediately suggest their mental condition, but this is not the rule in the feeble-minded.

The low narrow forehead, receding chin, closely set eyes, protruding and misshapen ears, and other facial irregularities so often referred to as the "signs of degeneracy" have not the importance in indicating mental deficiency which was at one time supposed. A great many feeble-minded persons on ordinary inspection present no physical signs whatever which would indicate real lack of intelligence, and but little importance can be placed on facial appearance as a means or aid to diagnosis.

It is well known that some workers in this field assert that they can pick out the defective from the normal by visual inspection alone; but when interrogated as to just what the signs are their answers are vague, uncertain and unconvincing. The statements that the suspects "lack soul in their eyes" or that "there is a something about them which it is impossible to describe, but which we can readily recognize," are too unscientific and absurd to merit serious consideration. It has long been recognized and proved by many amusing errors that the facial appearance is not a real guide to the true character, and it is unfortunately, for our purposes, equally true of the mentality. Furthermore, when these observers were actually put to the test, it was found that they were not able to select cases any more accurately than physicians who frankly confessed that they laid claim to no such special ability.

It is true that the aments may be divided roughly into two classes. Some are dull, apathetic, slow in their movements, and do not pay the usual attention to their surroundings. These, by their air of preoccupation and obvious lack of normal interest in what is going on around them may in some instances excite suspicion as to their mental soundness. The others who are overstimulated, always in motion and whose attention is easily aroused but cannot be held, would certainly afford no clue on casual inspection, but often, on the contrary, impress one as being unusually bright.

Muscular incoordination is so common and so marked in many of these cases that there is reason to hope that at some time it will be an important aid to diagnosis. At present we have no way of telling ordinary awkwardness and clumsiness from the incoordination of amentia; but in the future as these conditions are more carefully studied, points of difference may be discovered which will enable us to separate the two.

It would seem to be unnecessary to warn the medical examiner against mistaking the mental confusion and muscular incoordination which sometimes occurs in acute febrile disorders like pneumonia, typhoid fever, tuberculosis, uremia, etc., for some permanent mental disability; but since the error has occurred, it is well to be on one's guard against it.

SUMMARY

There is no one test for feeble-mindedness, and only by a routine examination of all the mental faculties can we make an accurate diagnosis.

The amount of acquired knowledge and the capacity of the mental functions should both be measured.

Physical signs and facial appearances are of but little use in picking out defectives.

The examination should be conducted along scientific lines with a clear comprehension of the psychologic basis of all the tests employed.

NOTE: Some of the stories given above are original. The remainder were obtained from various sources.

THE PRACTICAL APPLICATION OF THE ROENTGEN METHOD TO GASTRIC AND DUODENAL DIAGNOSIS *

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What we wish to bring to attention is not so much the theoretical aspect of the Roentgen diagnosis of gastroduodenal lesions, or a complete review of what others have done in this field, but just what we have found of practical value in our study of this part of the tract. We are frank to confess that there has been, as in all pioneer work, considerable criticism as to the value of this method. Undoubtedly many errors have been committed, and much discredit has thereby been cast on this procedure. This state of affairs has largely been brought about by several conditions.

In the first place, the pioneers in this work developed a technic which relied largely, if not exclusively, on fluoroscopic examination. By this means they worked out a system of diagnosis which may be called "diagnosis by symptom-complexes"; by this, we mean basing the diagnosis chiefly on the presence of various functional disturbances, hypermotility, hypomotility, exaggerated peristalsis, spasm, etc. This method, the "inferential or indirect method," is definitely opposed to what may be called the "positive or direct method"; that is, an attempt to demonstrate, if possible, the actual anatomic lesions themselves. This is the method which Dr. L. G. Cole of New York has so brilliantly developed.

We do not say that the fluoroscopic method is of no value. It certainly has its valuable applications, as we shall later show; but the careful production of serial plates frequently gives important evidence, especially positive evidence, in regard to gastric and duodenal lesions, that no one can find on the fluorescent screen.

The second source of trouble has been that many clinicians, largely internists, have visited busy clinics abroad, and have become enthusiastic over the possibilities of Roentgen diagnosis. They have returned to this country, prepared as they thought, to make their own Roentgen examinations. In the vast majority of cases, however, they have not had sufficient technical experience or a proper acquaintance with all the various sources of error, which comes only from doing the work continually. As a result, their chief productions, aside from errors of diagnosis, have been in enlarging the literature with comments on the inefficiencies of the method.

The third source of error, and one which is quite serious, is due to allowing the clinical diagnosis to bias the Roentgen diagnosis. This condition necessarily exists when clinicians make their own Roentgen examinations; but outside of this, many Roentgen specialists allow themselves to be persuaded by their consultants into making positive diagnoses when the Roentgen evidence is very slight or entirely negative. We should refuse to make a Roentgen diagnosis unless we have what can be considered positive Roentgen evidence.

What we mean by this is the presence constantly, on a series of plates, of a definite abnormality in the contour or structure of the bismuth mass. In connection with this, we wish to mention here that probably the greatest value in the Roentgen diagnosis of the gastrointestinal diseases lies in the possibility of classifying cases into medical or surgical categories. It is only in the cases which may be classed as surgical that we feel we are able to obtain really positive Roentgen evidence.

We shall now proceed to a consideration of the various pathologic conditions in which the Roentgen examination can be of definite help to the clinician. First we shall take up the question of gastric ulcer.

With regard to acute, simple, peptic ulcers, if we rely on the Roentgen evidence alone, either fluoroscopic or by means of plates, we are sure that a considerable number will be overlooked. When we say acute, simple, peptic ulcer, we mean simply mucous membrane erosion, with no invasion below the submucosa, and no considerable cicatrix. If we have good luck we may find the so-called "incisura," or sharp incutting of the bismuth contour. This is due to the reflex tonic spasm of the circular muscles. If, however, this is not found, and the size, shape and position of the stomach are normal, then there is no positive basis left for diagnosis. Some investigators are willing in such cases to make an inferential diagnosis of gastric ulcer from the presence of tender points and six-hour residue alone.

The more we have accumulated evidence on this subject, the more we have become convinced that six-hour

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* Read before the New York Academy of Medicine, at the annual meeting, Jan. 15, 1914.

gastric stasis is the least important factor in Roentgen bismuth diagnosis. The investigators who developed the idea of bismuth residue as a diagnostic factor always used the standard Rieder meal, consisting of 40 gm. of bismuth salts in 300 c.c. of cooked cereal. The workers who have attempted to transfer these conclusions bodily to their own cases have used a variety of test-meals, ranging from 300 to 600 c.c., and containing from 40 to 100 gm. of bismuth or barium. As a basis they have also used water, plain milk, malted milk, buttermilk, mashed potato and a variety of other mixtures. It is quite obvious that conclusions based on thousands of cases carried out under a similar technic cannot be transferred without change to a dozen other methods of investigation.

Besides this, however, and really what is much more serious, six-hour stasis is in itself merely a symptom. It depends on so many causes that any attempt to make a diagnosis from its presence alone is nothing more than inferential.

It is just this method of inferential, or indirect diagnosis, that we wish to protest against. In our attempt to outline what positive aids can be obtained from the Roentgen diagnosis, we feel that we must, to be fair, lay very little stress on six-hour stasis as such.

The same criticism can be applied to the more or less general spasms which are frequently seen in various parts of the stomach. The presence of gastric spasm is one of the most potent sources of error with which we have to contend. It may be due to gastric or duodenal ulcer, gall-bladder disease, appendicitis, renal calculus, pelvic inflammation, diseases of the nervous system such as tabes, chronic morphin, nicotin and lead intoxications, the clinical symptom-complex known as vagotonus, and still other causes not yet clearly defined. With such a variety of causes it is obvious that spasm is likewise merely an inferential bit of evidence.

We must repeat then that the positive diagnosis of acute, simple, peptic ulcer is frequently impossible; but even here, when there is merely negative evidence, the value is still great in placing the case in the medical and not in the surgical class. We do not believe that there are many surgeons who will operate on an acute, simple ulcer, apart from perforation or extreme hemorrhage, when there is no mechanical or other disturbance shown by the Roentgen method.

When we come to a consideration of chronic gastric ulcers, the situation in most cases is quite different. Here there is usually a production of scar tissue, or the presence of considerable erosion and penetration. In these cases the bismuth outline will show the presence of excrescences, outpocketings, niches and hour-glass contractions.

We must always be on guard against a purely spastic pseudo-hour-glass formation. Usually, repeated examinations will clear up the diagnosis. The evidence of perigastritic adhesions is usually best obtained by fluoroscopic examination.

Likewise the fluoroscopic method is of value in observing the chronic ulcers when found in the cardiac or median portions of the stomach. When we come to the region immediately adjacent to the pylorus, positive pathologic changes which are too small to be detected on the fluorescent screen can be seen constantly on the plates. By means of plates taken in the lateral position, views may be obtained of the anterior and posterior walls of the stomach, and a lesion detected which cannot be observed in any other way.

In all of the cases that we have examined up to date, we have failed as yet to find a single case of absolutely proved gumma of the stomach. Still we do not question that such a condition can exist, and we must guard against its possibility. We have, it is true, examined several cases which showed evidence of a tumor of the stomach, and had positive Wassermann tests, with evidence of a luetic involvement of the long bones as well; yet with no one of them was there any later proof against the assumption of coexistent carcinoma and syphilis. Likewise we have had several cases in which there was Roentgen evidence of chronic ulcer and a history of syphilis with positive Wassermann. In none of these cases, however, was the Roentgen evidence itself positive enough to be of differential diagnostic value.

Cancer of the stomach, in spite of improved methods of clinical diagnosis, and the wonderful surgery of to-day, is still the most deplorable condition known in the gastro-intestinal tract. The responsibility for this condition must be placed on the shoulders not only of the general practitioner, but of the special internist as well. Patients are often made so comfortable by medical means under a diagnosis of gastric neurosis or some similar diagnosis, that they easily go far beyond the operative stage. But even when all the modern methods of diagnosis are called into play, and careful examinations are made of the gastric contents, stools and blood. when a diagnosis of carcinoma is made, it is by no means early. In these cases the carcinoma is really well defined. This is not what we mean by early diagnosis of carcinoma. We must try to discover it when there is some hope for cure by radical surgery; that means before a positive diagnosis can be made by clinical methods alone. *It is in the employment of the bismuth-Roentgen method that we know we have a positive aid.* This method is especially important in that large number of cases in which the carcinoma is situated in the fundus of the stomach. Here there is no pyloric obstruction, and positive clinical evidence is usually entirely lacking. We are already discovering many of those overlooked early fundal cases, and as our technic advances we expect to discover more and more. The early diagnosis is based partly on the presence of irregular defects of filling, and partly on abnormalities of peristalsis as observed both on the fluorescent screen and on the plates.

Although one cannot be positive of the differential diagnosis, in every instance, between old ulcer and the malignant degeneration of old ulcer, still, in the majority of carcinomas, the defect in the bismuth mass is usually so suggestive that we feel it is our duty in such cases to advise strongly for surgery of the radical type, such as resection, and against that so much abused, palliative operation of gastrojejunostomy. Frequently the lesion is so small and so early that there is no marked change in the gastric secretions.

The next important, and probably the most easily diagnosed condition of the gastro-intestinal tract, is duodenal ulcer; yet even to-day the statement is continually made by roentgenologists that the positive diagnosis of duodenal ulcer by means of the Roentgen ray is impossible. This is true not only of investigators in this country, but especially of European observers. With the latter, it is again the fault of too much reliance on the fluoroscopic method. Cole of New York, by his methods, was the first to really make the positive Roentgen diagnosis of duodenal ulcer. Briefly, we can epitomize our ideas about this subject in a few propositions:

1. Ninety-five per cent. of all duodenal ulcers appear on the superior surface of the duodenum with the cicatrix extending either posteriorly or anteriorly or both, but rarely on the inferior surface.

2. Anatomically, the first portion of the duodenum is a constant entity; that is, in healthy, normal persons it will always present the same smooth, regular appearance.

3. This normal condition can be demonstrated by bismuth in every normal person as a regular, smooth bismuth shadow, of a characteristic shape and outline, the so-called "bishop's cap." Failure to obtain this cap in a normal person is due either to improper technic or to improper bismuth mixtures.

4. If the normal duodenal cap can be demonstrated in every normal person, then the presence on plates of a constant defect in the cap means a real pathologic condition. Right here let us mention that this again means the differentiation between medical and surgical cases. In no case of duodenal ulcer, apart from perforation or extreme hemorrhage, should operation be performed unless the bismuth examination shows a definite, constant deformity of the bishop's cap. The cases in our experience in which this warning was disregarded have mostly proved to be surgical failures.

5. Every duodenal ulcer which is more than a simple peptic erosion has a sufficiently deep cicatrix to deform the bismuth contour. The simple ulcers are clinically negligible in this connection, since every case which finally comes to the physician for help already has an abundant cicatrix.

6. In this connection the negative diagnosis is as valuable as the positive. Every patient in whom a normal duodenal cap can be demonstrated has no indurated or surgical ulcer of the first portion of the duodenum. This fact has been demonstrated to our satisfaction time and time again. We do not believe that any internist, with clinical methods alone, can make as positive a diagnosis of the presence or absence of indurated duodenal ulcer, in every case, as the Roentgen method can; but we reserve this one exception, that unless the roentgenologist is thoroughly trained and carries out the method that has been demonstrated by Cole, this statement might be disproved.

The last condition which we have to speak about is that of gall-bladder disease. In most cases, when there have been repeated infections of the gall-bladder, adhesions will usually form. Frequently these can be demonstrated by their attachments to the antrum of the stomach, the first or second portions of the duodenum, the hepatic flexure or the transverse colon. Occasionally, but not often, the shadow of an enlarged gall-bladder can be seen. This, however, is not definite enough to warrant any positive diagnosis. About the most positive condition we have is the actual demonstration of gall-stones themselves. It is well known that pure cholesterin stones absorb the Roentgen rays very little, and consequently are rarely detected on the plate; but when there has been infection and inflammation, calcium is deposited in characteristic lamellae, and the shadows of gall-stones consequently can be seen.

With our improved methods of technic for soft tissue study, we are at present finding more and more cases in which gall-stones are demonstrated. We believe that in the future, with more attention devoted to this part of the tract, we shall be able to demonstrate stones in nearly every case in which there has been repeated infection.

We have thus far purposely omitted from this paper any consideration of the problem of gastroptosis, or of ptosis in general. Such a discussion has no place in a paper on the practical application of the Roentgen method. Too many assumptions of pathologic conditions have been based on Roentgen evidence that might well have been construed as absolutely normal. Many observers have even gone further and attempted by the Roentgen examination of the alimentary tract to find a cause for various nervous disorders, among them epilepsy. The published results of these investigations show a heaping up of theoretical conclusions on a very shaky base of still disputed Roentgen evidence. We therefore do not feel warranted in discussing this problem further.

To sum up, we believe that by means of the Roentgen bismuth examination of chronic gastro-intestinal diseases we can often obtain positive diagnostic evidence which is unobtainable by any other means. By this method we can usually separate these chronic cases into medical and surgical classes.

Before closing, however, we wish to emphasize that this method is merely one kind of physical examination. It is by no means an independent method, although it frequently gives evidence not shown otherwise. The Roentgen examination should always be preceded by a thorough general physical and laboratory examination. Then, and then only, can we achieve what is after all the ultimate aim: the treatment and possible cure of the patient.

259 Beacon Street.

THE SURGICAL TREATMENT OF SPINAL CORD INJURIES WITH REPORT OF CASES *

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Traumatic injury of the spinal cord, from either fractured vertebrae or bullet-wounds, is of frequent occurrence, and the proper management of these cases is of great importance both to the medical practitioner and to the surgeon. A proper interpretation of the history of the accident, together with a careful clinical examination, will usually afford such an adequate conception of the nature of the lesion that a prompt decision may be reached as to the efficacy of surgical interference. Several roentgenograms should be made whenever possible, but unless the reading is clear, more credence should be placed on the clinical finding and the history of the accident, if it can be obtained.

In fractures and dislocations of the spinal column, statistics show that in about one-third of the cases the cord escapes injury. The displaced bones, however, may immediately spring back into place, leaving the cord contused, compressed or lacerated. If the force is less severe, the canal may be but slightly narrowed, and the cord only moderately contused or compressed.

The history of the onset and development of symptoms is of great importance. When the spinal column has been violently bent, wrenched or twisted, the onset of paralysis may be immediate. It is at once *important* to determine then, whether the cord has been partially or totally severed, or whether there is only suspension of transmission.

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* Read before the Chattanooga Academy of Medicine, February, 1914.

With complete laceration of the cord, the patient at once becomes paraplegic; anesthesia involving all types of cutaneous sensibility is immediate and absolute; there is retention of urine until the overdistended bladder gives way to dribbling; there is total loss of reflexes; retention of feces occurs, and decubitus may develop within twenty-four hours. When the injury is to the cervical or upper dorsal regions, abdominal distention may appear early and be of serious import.

Whenever this picture is presented following trauma, bullet-wound or stab-wound of the spine, surgery offers no rewards. The axons of the true cord are without neurilemma, and whenever it is cut or lacerated, it never regenerates. These patients must forever depend on the kindly offices of the general practitioner, who will prolong life and comfort by carefully guarding against systemic infection from cystitis, ascending infections of the kidneys and bed-sores.

Surgical interest centers chiefly about those cases which do not present unequivocal evidence of complete severance. In these the results are often most spectacular.

Partial lesions frequently occur which are due to incomplete laceration with contusion, and to compression, either by splintered bone, displaced bone or by clot. With slight or partial lesions, the paralysis may at first be complete, but soon improve, or it may amount to mere muscular weakness.

When the lesion occurs in the cervical region there will be a paraplegia involving both upper and lower extremities. In the dorsal region, there appears a paraplegia involving both legs. Minor lesions may produce a monoplegia, diplegia or spinal hemiplegia (Brown-Séquard type). In lesions of the cervical and dorsal regions the central neuron type is present, but in the lower lumbar and sacral regions the paralysis is always flaccid. In the upper lumbar, the lesion may at first be flaccid and later show a combination of central and peripheral neuron types (Johnson).

The diagnostic and prognostic significance of the zones and areas of anesthesia are at once apparent. The distribution of the areas of anesthesia correspond to the affected segments of the cord. In many lesions their definite location becomes almost a mathematical certainty.

In general, with transverse injuries to the cord, the sense of touch marks the level of the lesion, and both the epicritical and protopathic sensibilities should be determined. In transverse lesions the epicritical faculty is lost at a higher level than the protopathic, and the epicritical loss of tactile sensation usually marks the level of the lesion very accurately (Mix).

In partial lesions the anesthesia may be incomplete, of limited or dissociated distribution, or it may be confined to areas considerably below the lesion.

The reflexes of greatest importance are the plantar and knee-joint. A positive Babinski gives positive evidence of injury to the lateral columns of the cord, in the motor tract. The plantar reflex is absent in lesions of the sacral region, with total destruction of the cord, and the reflexes below that level are abolished. They may be increased in partial cord destruction, or in cord compression, signifying that normal brain inhibition has been interfered with. In several dorsal lesions, the knee-jerk may at first be absent, and later become exaggerated.

An electrical response from the various muscles involved, if present at all, is of importance when considered with other findings.

The operative possibilities in these cases are, of course, limited; but a discriminating diagnosis of the site and nature of the lesion should be made with all promptness, and whenever feasible, operative interference should be resorted to before there is permanent damage to the cord. The inevitable sequence of decubitus and bed-sores becomes almost a real contra-indication because of the danger of contact and metastatic infection.

When gunshot wounds inflicted from the side or front penetrate the spinal canal, visceral injuries must of course receive first attention. Wounds from behind offer the more favorable cases for immediate operation. No case should be considered hopeless until after repeated roentgenoscopy and the study of clinical symptoms, from which it is evident that the cord has been severed or that the location of the bullet precludes a safe operative risk.

Dislocations of the vertebra are not infrequent, and their treatment by extension and mechanical appliances has proved as disappointing as it has hazardous.

A simple laminectomy affording decompression to the impinged or compressed cord has within the past few years given startling results. It has been shown repeatedly that several laminal and spinous processes may be removed with but little detriment to the individual, and with but slight danger of trauma to the cord. The removal of spiculae of bone which penetrate the cord, or compress it, and the early removal of the extradural clots before Nature has attempted to remove them and extensive adhesions have formed, is without doubt a commanding duty of the surgeon. The prognosis with and without operation should be carefully weighed and the subsequent course promptly determined.

Laminectomy is without great operative or postoperative hazard. An incision is made over the spinous processes; the laminae are freed by blunt dissection from the overlying musculature and thoroughly exposed. By means of a chisel, saw or forceps, the laminae are freed close to the transverse processes and removed. An aperture somewhat more than the diameter of the cord must be insured to give free and unrestricted decompression. Care should be taken not to wound or open the dura unless special indication presents.

In separating the muscles from the laminae there is often considerable venous bleeding, which is best controlled by freeing one side and packing with hot saline sponges while the other side is being dissected. Bleeding from the bone after removal of laminae is easily controlled by plugging with a fragment of loose muscle.

A wide exposure of the canal is necessary, and when a decompressive laminectomy is made, the angulation of the cord must be relieved completely by the removal of a sufficient number of laminae. Occasionally it becomes necessary in cases of old fracture to open the dura and examine the cord. Hematomyelias or cysts may be opened and drained.

When the necessary surgical measures have been instituted, the dura should be closed carefully with catgut, the muscles and aponeurosis approximated and the skin closed with linen, reinforced, if desired, with silkworm gut. As a safeguard both to cerebrospinal fluid leakage and to meningeal infection, laminectomy wounds should not be drained. The upper and lower edges of the dressing should be sealed with wide strips of adhesive plaster to prevent contamination.

The scar tissue which forms between the resected laminae is exceedingly fibrous and at times shows reformation of bone (Cushing). The protection of the cord is thereby found entirely adequate. Local rigidity, stiffness and muscular weakness usually disappear within a few months; after laminectomy, the spine needs no special support, except in cervical fractures, and within a few days the patient may be changed from side to side, bolstered with pillows. Hexamethylenamin should be given for several weeks, the bladder and bowels should receive careful attention, and dependent parts of the body should be padded to prevent decubitus. Some surgeons do not catheterize, depending on overdistention to produce incontinence; while others fear overdistention as favoring cystitis. Laminectomies in the lower dorsal and lumbar regions are often followed by a pronounced abdominal distention, unrelieved by enemas or cathartics, and best managed by small doses of morphin and atropin. As soon as the patient will permit, faradism and light massage may be given once or twice daily, increasing as the condition and improvement warrants.

Elsberg[1] believes that the surgeon should be very conservative in his recommendation of operative interference for recent fracture of the spine with serious injury to the cord. Yet, with bone-pressure threatening destruction of the cord, some of the most startling results are obtained by prompt interference. The following case is illustrative:

CASE 1.—Floyd G., aged 16, while picking chestnuts fell from the top of a tree, striking on his back across a heavy limb. When he reached the ground he was able to walk part of the way down hill, when his legs gave way and he crawled a few yards further. He could make no more progress because of pain in the back. He was carried to his home in an ambulance, and when seen by me two hours later, Oct. 8, 1913, presented a complete paraplegia from the waist down. There was great pain on pressure over the lower dorsal region. Examinations October 9, 10, 11 and 12 showed flaccid paralysis of both legs, with absence of knee-jerks and ankle-clonus; superficial sensation was absent, but deep sensation was slightly present in both legs. There was complete retention of urine and feces. Pressure over the spine on the eleventh and twelfth dorsals caused the greatest pain. Edema in that region prevented the detection of any deformity. The patient was removed to Baroness Erlanger Hospital October 11, where roentgenograms were made; as no deformity could be recognized in the bodies of the vertebrae, a fracture of the arch was diagnosed.

The history of the patient's having walked several steps after striking the ground showed that the paralysis was not immediate and therefore precluded a complete or serious severance of the cord. The destructive effect of pressure was feared, and after localization of the lesion from the upper boundary of the zone of anesthesia, a laminectomy was done. An incision was made from the eighth to the twelfth dorsal vertebra and a fracture of the eleventh dorsal lamina was found with almost complete depression on the cord; the spinous process of the tenth vertebra was crushed and the lamina partially broken. These two laminae were completely excised and a long extradural clot was found, which extended from the tenth to the twelfth dorsal vertebra. This was carefully removed with fine dissecting-forceps, and the cord was seen to be free and uninjured. The dura was not opened. The muscles and aponeurosis were carefully drawn together with catgut, and the skin closed with linen.

There was no postoperative shock. A few hypodermics of morphin and atropin were necessary to control pain and restlessness. On the third day sensation began to return. In one week the patient could move the toes on each foot. Urine was voided consciously on the sixth day. With faradism and massage the patient continued to improve and went home on the eighteenth day. In seven weeks he could walk with crutches, and in eight weeks he went unassisted across the room. He is now fully restored without cystitis or other evidences of the paraplegia except slight prominence of the ninth dorsal spinous process.

Early operation in these cases undoubtedly gives the most satisfactory results. Improvement would probably occur in the course of time and a partial restoration of function, but a laminectomy done before the development of cystitis or decubitus, and before permanent pressure-changes have occurred in the cord, gives opportunity for a more complete and prompt recovery, without the danger of death from intercurrent infection during an expectant course.

In gunshot wounds of the spine with paralysis, if the condition of the patient will permit, and there is no visceral injury to contra-indicate, an immediate operation may often be of advantage. Whenever possible, roentgenograms should be taken, giving both the lateral and the anteroposterior location of the bullet. The wound of entrance should be painted with iodin and a protective dressing applied without probing, until the operative or expectant course is determined.

The following cases which have occurred in my service during the past year will illustrate briefly the question of conservatism.

CASE 2.—John L., aged 29, was brought to the hospital with a gunshot wound at the eighth dorsal vertebra. He was unable to use the body below the hips, but complained of intense pain in both legs, the muscles of which jerked spasmodically. Touching or attempting to move the legs caused intense pain and muscular spasm. Roentgenoscopy showed a flattened bullet lying to the left of the cord at the eighth dorsal vertebra. An incision was made from the seventh to the tenth dorsal vertebra. The aponeurosis and the muscles were retracted. The fractured laminae of the eighth dorsal vertebra were removed and the flattened bullet, embedded in the transverse process, was removed. The dura was slightly lacerated and some extradural clot was present. The cord, however, was not exposed and was uninjured. The wound was closed without drainage, and the patient having made an uninterrupted recovery, was discharged on the twelfth day.

CASE 3.—Maggie S., aged 38, was brought to the hospital with a gunshot wound at the twelfth dorsal vertebra. Roentgenoscopy was not available. There were motor weakness in both legs, intense pain in the back, and hyperesthesia in both legs, particularly in the feet. An incision was made over the lower dorsal region with the wound as a center. The left transverse process of the twelfth dorsal vertebra was shattered and the bullet lay loose in the fragments. The bullet and the fragments of bone were removed. The wound was swabbed out with 2 per cent. phenol (carbolic acid) and closed. It was not deemed advisable to do a laminectomy as the symptoms were rather more irritative than suggestive of pressure. Within three weeks the patient had completely recovered and was discharged.

CASE 4.—Mrs. H. M., aged 22, had an accidental gunshot wound through the midsternum, ranging downward and backward, May, 1912. The patient was not seen by me until September, when a complete paraplegia was found. There were absolute motor paralysis of both legs and complete anesthesia. Knee- and ankle-jerks were lost. Constipation yielded to enemas and cathartics. The bladder acted unconsciously. Operation at this time was refused, and galvanism, faradism and massage with potassium iodid and strychnin were given. Gradual improvement began, and in eight months the patient could elevate and rotate the legs, and control both bladder and bowels. Hip-braces were fitted and it became possible to walk about the room with crutches.

In November, 1913, a laminectomy was done by Dr. A. S. Taylor, New York Hospital, with the following findings, for which I am indebted to him:

"The cord about the first and second lumbar was much constricted and narrowed; pressure seemed greater at the upper level of first lumbar. The lamina of the first lumbar was very much thickened and hard, considerable callous formation causing constriction of the cord.

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[1] Elsberg: Surg. Gynec. and Obst., February, 1913, p. 125.

"Laminae of the twelfth dorsal and first and second lumbar completely removed. Dura was opened and moderate adhesion of dura to cord at point of constriction. Right side under first lumbar laminae not extensively separated, all pressure on cord removed. Dura and wound closed."

After operation there were further improvement in sensation and an apparently gradually motor strengthening.

The question of early operation must be determined with each individual case, but spinal decompression by means of an adequate laminectomy should not be postponed without good and sufficient contra-indication.

ECZEMA MARGINATUM OF THE TOES

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Sabouraud has shown that a number of cases that used to be regarded as eczema of the toes are not eczema, but a dermatitis caused by the same cryptogam that causes eczema marginatum of the crotch. This cryptogam, called by Sabouraud the *Epidermophyton inguinale*, is, as its name indicates, a fungus, and resembles but is not identical with the ordinary ringworm fungi. It, however, does not attack the hair, but lives exclusively on the epidermis, hence the name that Sabouraud has given it, the epidermis "phyton" or plant. The locality in which it at least gives rise to its most characteristic skin disease is the inner side of the thighs of the male, especially the left side, against which the scrotum rests. The disease may spread farther down the thigh, and it may also occur in the arm-pits, and in women under the breasts; but Sabouraud has shown, as before indicated, that a frequent situation is the region of the toes and forepart of the foot, where it gives rise to a disease resembling intertrigo or eczema of the toes, and it is usually so diagnosed. Rarely, also, the plant may grow on or between the fingers.

The precise diagnosis of this disease has more than a purely scientific interest: it lends precision to the therapy. In fact, these patients used to go from physician to physician seeking relief and finding none; and even with an accurate diagnosis and an efficiently worked-out treatment it will be seen by the present case how difficult it sometimes is to cure the affection.

History.—Feb. 28, 1913, a draftsman presented himself with an eczema-like affection of the toes of the right foot. The skin between and under the toes was reddened and scaly, but not moist. Along the ball of the foot the skin was roughened and slightly reddened, and in this rough area there were a few bright-red dots which he said itched, and out of which he had the previous evening squeezed a little serum. The margin of this area on the inner edge of the great toe was wavy, red and desquamating. As this margin ran backward along the ball of the great toe and around across the sole to the outer side of the little toe, it was not wavy, but was rough and corneous. On the outer surface of the little toe the marginal line was rough and red. On account of this marginal line, and because only one foot was affected, our suspicions were aroused. The value of noting this margin in arriving at a diagnosis cannot be overestimated: the shrewd Hebra called the disease eczema marginatum, and both Sabouraud and Dudumi speak of the margin as a special feature. On observing the condition we inquired of the patient if he had any trouble in the crotch. He then proceeded to give us the following history:

He roomed with a man who had been a patient of ours for an affection of the crotch and axilla due to the *Epidermophyton inguinale*, which he had acquired presumably in an athletic club. This young man's trouble cleared up under a salicylic acid-sulphur salve. At about this time the present patient also acquired a dermatitis of the crotch, which cleared up under the same ointment as that used by his room-mate. About this time also the present eczema of the toes of the right foot appeared, and this absolutely refused to budge with the treatment that had cured the affection in the crotch.

Culture of the Epidermophyton Inguinale.—In accordance with the advice of Sabouraud, the rough margin on the sole was curetted, and the deeper scales were boiled, not simply warmed, in liquor potassii hydroxidi in a watch-glass, and were then examined with the one-sixth objective. The thick-branched spore-bearing mycelium of the epidermophyton was demonstrated. Other curettings from the deeper lesions were placed in 95 per cent. alcohol in order to kill associated bacteria and fungi. After five and ten minutes, respectively, fragments were placed on 2 per cent. glucose agar. Of those curettings left in alcohol ten minutes none produced any growth, but one of those left in five minutes gave rise at room temperature to a typical growth of the epidermophyton. This culture had a dark-colored center and a citron-colored border, and was umbilicated. After about a month the growth apparently stopped spreading. About two weeks later a new growth, of a perfectly white cottony appearance, sprang up quickly and nearly covered the original culture. A portion of this very tenacious mold, when teased apart and examined with one-sixth objective, showed the many branching club-shaped or fruit-like bodies so characteristic of the *Epidermophyton inguinale.* Subcultures showed these club-shaped bodies precisely as described by Sabouraud, and this type of mycelium with its branching degenerate forms continued constant through further transplantations, until it was finally killed out by an overgrowth of penicillium, its usual fate.

The curious degenerative form with the branching club-like fruit bodies distinguish, as Sabouraud[1] has pointed out, this fungus from the ringworm fungi. It is therefore not a ringworm fungus, as used to be thought, but a mold in a class by itself.[2]

If the preceding had been all this man's history it would have been only the usual one, but there was a personal part that was very interesting. The skin affection of the toes was remarkably stubborn, but before we describe the treatment a short account of the behavior of the fungus on the skin will be given.

BEHAVIOR OF EPIDERMOPHYTON INGUINALE ON THE SKIN

The fungus most frequently occurs in the crotch, especially in men in the left scrotal thigh fold, where the scrotum lies against the thigh, and in women under the breasts, and in the axilla or in any other cutaneous fold, and between the toes in both sexes. Shortly ago we had under observation a woman with the affection under the breasts and in the crotch, an unusual location in her sex. It has even been found in the retro-auricular fold.[2] Eczema marginatum is a disease almost confined to fleshy persons or to the young who are naturally active and perspire freely, and it occurs, as we have seen, in situations in which perspiration is abundant.

The infection begins in the depth of an integumentary fold and spreads outward to where the folds separate, dying out as it advances, and leaving behind a dirty, brownish, discolored surface, so that it is only at the active margin that the fungus may be demonstrated. The disease rarely spreads above Poupart's ligament, but it frequently runs back along the fold that exists in fat persons between the perineum and the thigh, and thence up along the internatal fold. These situations are favored evidently because it is in them that the fungus finds warmth and moisture, and also sufficient air for it to flourish. That it requires air as well as moisture is shown by the fact that it is at the edges of the integumentary fold, and not in its depth that the disease remains for years localized. It may even form patches down the inner side of the thigh where the irrigation from the sweating in the groins is often abundant. On the foot the disease tends to remain active between the toes, and to spread by a margin on the forepart of the foot. This activity between the toes is probably due to the warmth and abundant moisture of this region, and also to the circumstance that much air is pumped between the toes in walking, so furnishing the abundant supply both of moisture and of oxygen which the plant seems to require. It is likely that in the present case the disease began, as the history indicates, in the crotch, and that spores or particles of the fungus fell down inside the drawers and stockings, and so reached the forepart of the right foot, where it found a soil suitable for its growth. We shall later discuss why this foot was susceptible.

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[1] Sabouraud, R.: Sur l'eczéma marginatum de Hebra et de sa très fréquente localisation aux pieds, Arch. f. Dermat. u. Syph., 1912, cxiii, 924.

[2] Dudumi, V.: Beitrag zur Kenntnis des Eczema Marginatum (Hebra) oder der Epidermophytie inguinalis (Sabouraud) Dermat., Ztschr., December. 1913, 1109.

Castellani's observations in Ceylon on eczema marginatum are interesting as showing the effect of heat and moisture in the development of the fungus — the popular name for the disease there is "dhobi itch," and the patients become spontaneously free on going from the warm humid plains to the cool mountains, to reacquire the trouble on returning to the plains.[3]

In order to cure the disease this fungus had to be destroyed, and Sabouraud has pointed out the drugs to be used, and what is more important, their mode of application. The main reliance is to be placed on chrysarobin ointment, in the strength of 1 or more per cent.

THE TREATMENT OF ECZEMA MARGINATUM

The treatment was begun in the present instance by curetting up the edges of the lesion and the hard scales, and then painting well and intimately into the skin once a day:

Tincture of iodin	10 parts
Alcohol	90 parts

After painting on the iodin an ointment was employed consisting of:

Zinc oxid	10 parts
Lanolin	10 parts
Almond-oil	10 parts

In some places on curetting the sole and toe the epidermis came off in a fine white powder, like wheat flour. In one situation, that the night before had felt uncomfortable and where there were a few pustules, the iodin was seen to stain quite deeply, as it does when a fungus is present (Allan's sign).

A few days after this we began the chrysarobin-salicylic acid application. We had the patient rub well into the toes and fore part of the foot in the morning an ointment consisting of:

Salicylic acid	1 part
Ointment	50 parts

We had him also butter this ointment on a piece of cloth and attach it to the toes by a loop of thread, and flap the buttered side of the cloth against the sole in drawing on the stocking. The loop around the toe prevented the cloth from slipping back on the foot, and the walking which the patient did during the day massaged the ointment into the skin. At night, after any loose epidermis had been removed, the chrysarobin ointment was rubbed in. It consisted of:

Chrysarobin	0.3 part
Lanolin	15.0 parts
Petrolatum	15.0 parts

The affection still persisted but lost its specific character and resembled more an uncomplicated eczema, which we for a time supposed it to be. In fact it is not so uncommon to find an eczema to persist after its immediate cause has been eliminated, as scabies, for instance, may start an eczema that will endure after the itch-mite has been destroyed. We therefore stopped the use of chrysarobin as being irritating, and treated the affection as an eczema.

It was about this time that we noticed another peculiarity in this man's case. He was anemic (blood-color 74 per cent. on the Dare instrument), the skin over the right shin pitted, and the veins of the right leg were larger than those of the left. It was thought that this condition of affairs was keeping up the eczema. For some time the affection seemed to improve, and then pustules began to appear as when the patient first came under treatment, and a thorough search in the deep scales again demonstrated typical large mycelial threads with large spores. The treatment, therefore, had not been effective in killing out the fungus. The fungus is by no means easily found when it is present. Many negative examinations were made in this case, for example. The under surface of the deep scales should be examined, and, as before mentioned, the scales should be boiled in liquor potassii hydroxidi in order to make the mycelium spores visible.

Seeing that we had failed to destroy the fungus, we determined to use more energetic means to clear off the hard thick epithelial covering of the sole. We also decided to use a much stronger chrysarobin ointment.

At night the patient was instructed to apply a lotion consisting of:

Solution of aluminum acetate	60 parts
Saturated solution of boric acid	600 parts

This was applied soaked in a cloth, which was wrapped around the fore part of the foot, and then the whole was enclosed in a rubber-lined bag such as is sold in drug-stores to hold sponges. A bandage was then applied over all to keep the dressing close to the foot. The next morning after an all night application of the dressing the epithelium was sodden and soft, the acetic acid in the solution of aluminum acetate naturally contributing to this result. In the morning a strong salicylic acid ointment was applied that was well rubbed in during the day in walking about. The salicylic acid ointment employed was:

Salicylic acid	6 parts
Petrolatum	44 parts

When in this way a good denudation of the epithelium was secured a strong chrysarobin ointment was well rubbed in:

Chrysarobin	1.5 parts
Lanolin	15.0 parts
Petrolatum	15.0 parts

It is noteworthy that even after the skin was denuded of its hard epithelial covering, the application of this chrysarobin ointment did not trouble the patient. It effectually killed the fungus, however, and cured the disease.

Sabouraud[4] says that he finds this disease of the feet to be very frequent, having noted twenty-three cases in a year and a half as opposed to two cases of true eczema of the same region and one case of ordinary ringworm of the plantar region of the type described by Mouktar. This phase of the disease does not seem to be nearly so frequent with us, as we have found only this case of the foot and one of the hand. In the crotch and in the

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3. Alexander, Arthur: Beiträge zur Kenntnis des Eczema marginatum, Arch. f. Dermat. u. Syphilis, May, 1912, p. 22.

4. Sabouraud, R.: Arch. f. Dermat. u. Syph., 1912, cxiii, 930.

axillae it is much more frequent, occurring occasionally as epidemics. Its comparative rarity may be due to the cool climate of California—our winters are not cold but cool, and our summers are cool and even cold, so that we have a temperate climate the entire year.

In view of the clinical findings, the occurrence and unusual persistence of the disease on the right foot is interesting, as showing some of the factors contributing to susceptibility to this disease. It will be remembered that the young man was anemic, that the skin over the right shin pitted on pressure, that the veins of the right leg were larger than those of the left, and that the patient was a draftsman, so that he had to stand a great deal. We could not elicit from him by question or by observation that the right foot was more sweaty than the left. The anemia and the circulatory imperfections would tend, however, to increase the carbon dioxid in the blood of the foot above the carbon dioxid optimum, and therefore would lower the tissue resistance. We also know that anemia, increased pressure in the blood-vessels as in standing and in varicose veins, and increase of carbon dioxid in the blood above the carbon dioxid optimum all favor increased transudation of serum.[5] We also know that an increased amount of serum in the mucous layer of the skin tends to increase the thickness of this layer (acanthosis) and also causes hyperkeratosis of the horny layer (parakeratosis). The affected region in this case was parakeratotic and hyperkeratotic, and this constituted the chief difficulty in treatment. This hyperkeratosis had to be softened down by increasing the energy of our keratolytics, and we here wish especially to draw attention to the employment of solution of aluminum acetate as a keratolytic, and to its prolonged application as a compress enclosed in a rubber bag. We also in this case had to increase the strength of the mycocide. The actual contact of the chrysarobin with the fungus brought about by the denudation of the deep epithelial layers is of the first importance in the treatment. The strength of the chrysarobin ointment must also be of importance. Sabouraud, as above indicated, employs a 1 or 2 per cent. ointment. Whitfield[6] uses a 10 per cent. application composed of:

Chrysarobin	3.6 parts
Chloroform	10. parts
Alcohol	10. parts
Acetone	10. parts

We employed in the case here reported a 5 per cent. chrysarobin ointment. A 5 per cent. ointment would have a much stronger effect on the deeper layers of the skin than a 5 per cent. solution in acetone.

323 Geary Street.

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[5] Fischer, for instance (Physiology of Alimentation, 1907, p. 628), is of the opinion that an increase of carbon dioxid markedly increases the affinity of the colloids for water.

[6] Whitfield, Arthur: Eczematoid Ringworm of the Extremities and Groin, Brit. Jour. Dermatol., December, 1911, p. 385.

The Careless Midwife and Ophthalmia.—Between the months of June and September, 1913, the commission [Ohio Commission for the Blind] investigated in one city cases in the care of seven midwives, six of whom were licensed, in which nine infants were found to have ophthalmia neonatorum and for which a microscopic diagnosis showed the presence of gonococcus infection. In no case did the midwife make any attempt to report or secure treatment for the condition. In every case, however, information concerning the condition reached a nurse in time to secure expert treatment and save sight in eight and partial sight in one case.—Marian A. Campbell, in *Ohio State Med. Jour.*

PARATYPHOID FEVER

WITH REPORT, INCLUDING POST-MORTEM EXAMINATION, OF A FATAL CASE OF THE "A" TYPE

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Since fatal cases of paratyphoid fever of the "A" type are apparently of rare occurrence, while because of this the pathologic anatomy is founded on a very few cases, and since the differentiation of this disease from true typhoid is of considerable importance, it would seem that anything which might contribute to the clinical history, bacteriologic findings or pathologic anatomy of this infection is of value. With this in mind, the present study was undertaken.

REPORT OF CASE

Patient.—A teamster, aged 34, American, widower, was admitted to the Hospital of the Good Shepherd, Oct. 30, 1913, complaining of a "general weakness" which had existed for three or four weeks prior to his admission.

Previous History.—The patient's family history is unimportant. He had had the usual diseases of childhood. When a young lad, as a result of a blow on the head from a large iron bar, his skull was said to have been fractured, though it was not operated on. According to patient's sister, he has since not been normal mentally, and because of this was unable to obtain an education. The patient says that at the age of 14, as a result of smoking cigarettes, he had a "cigarette" cough and since has not used them. He is temperate of habit, using tobacco, tea, coffee, beer and wine in moderate quantities. He denies venereal history.

Present Illness.—The patient says that three or four weeks ago, he had a hemorrhage from the nose though he did not spit or vomit blood. During the last two weeks, a cough with a slight expectoration, which he has had for some time, has grown worse and, although not severe, has caused more trouble during the day than previously. During his illness, patient has had much stomach trouble attended with nausea and poor appetite, but no vomiting. No pain has been present in the stomach or abdomen. He is able to walk only a short distance and can stand but for a few moments without great exhaustion. October 26 the patient complained of chilly sensations followed by sweats, which lasted all that day and part of the next. The sister of the patient says that for two or three days before admission he had had a morning temperature of about 102, rising to 103 in the evening.

Physical Examination.—Patient is thin and emaciated (thinks he has lost weight in the last two weeks), has an anxious look and does not seem to comprehend easily or answer questions readily.

Head: Normal in shape; no scars. A slight depression all the way across forehead. Pupils equal and moderately contracted; react to light and accommodation. Face flushed and skin dry and rough. Nose apparently normal, but mucous membrane covered with dry crusts. Mucous membranes of the lips and cheek pale and dry, with many cracks on the lips. Tongue protruded in the midline without tremor; dry and covered with a thick white fur; a number of deep fissures on the upper surface. Teeth in poor condition and covered with sordes. Gums and mucous membranes bleed easily. Throat red and dry. Facial expression dull and apathetic.

Glandular System: No palpable glands.

Circulatory System: Pulse soft and regular and easily compressible. A slight degree of arteriosclerosis present. Heart-borders, upper in third interspace; right at the left margin of the sternum, and left 4 inches from the midsternum. Apex-beat palpable in the fifth interspace, 3½ inches from the midsternum. Sounds weak and fairly rapid, but regular. No murmurs heard.

Respiratory System: Lungs are normal to percussion and auscultation on the anterior surface. Posteriorly, right apex and left apex are normal to percussion and auscultation. Below the angle of the scapula, the right side is somewhat higher pitched, and a few fine mucous râles are heard below the scapula and over the base. A few râles are heard also over the right axillary region below the seventh rib. The left side, below the angle of the scapula, is normal to percussion and auscultation, but a higher note and a few moist râles are heard over the left base. This does not change with the change of position of patient. Tactile and vocal fremitus seem to be somewhat diminished over the back on both sides.

Liver: Relative dulness from the fourth to the sixth rib; absolute dulness from the sixth to the free border of the ribs. Not palpable, and not tender.

Spleen: Extends from the seventh to the tenth rib in the midaxillary line and is not palpable.

Abdomen: Soft and tympanitic. No evident masses and no points of tenderness on palpation.

Skin: A general erythematous blush on chest and back, fading on pressure. A few rose-spots on the abdomen and chest.

Provisional Diagnosis.—Typhoid fever.

Daily Notes.—November 3: Temperature higher, and patient seems weaker and more dull. Tongue dry and tremulous, and abdomen tense. Heart-sounds are weak, but regular. Widal negative for typhoid agglutinins.

November 6: Temperature lower. Patient dull and disinterested. Abdomen distended, but not hard. Blood-culture negative.

November 7: Temperature still continues high and even. Sponges are used to reduce the temperature if above 101 F. Patient says that he feels much better. No point of tenderness over the abdomen.

November 8: Patient is delirious and picks at the bedclothes.

November 10: Apices of both lungs are high-pitched. Right lung posteriorly is dull below the spine of the scapula, and coarse mucous râles are heard over the greater part of the lower lobe. Left side is apparently normal.

November 11: Temperature 101; pulse 120; respiration 36. Abdomen somewhat distended, but no finger-point tenderness and no rigidity. Widal positive, with *Bacillus paratyphosus A.* Widal negative, with *B. paratyphosus B.*

November 12: Patient apparently worse. Temperature about the same; respirations fast and labored. Some rigidity of the neck muscles. Abdomen still somewhat distended. Blood culture positive for *B. paratyphosus A.*

November 13: Localized area of dulness about the size of an orange present over the right lung below the angle of the scapula. Bronchial breathing over this area, and a few fine râles heard. Left lung dull along the spine and breath sounds are blowing in character. No râles heard. Abdomen the same as previously. Patient apparently better.

November 14: Patient was restless and delirious all night. He had seemed somewhat improved for the last two or three days, but toward morning, the pulse-rate increased, respirations increased and became labored, and quite suddenly about 7 a. m., the patient died, it being approximately the twenty-ninth day of his disease.

Temperature, Pulse-Rate and Respirations.—The record of these is obtained from the chart.

Urine Examinations.—October 30: Amber color, acid reaction, specific gravity 1.030, trace of albumin present, no sugar, Diazo reaction positive.

November 7: Dark amber color, alkaline reaction, specific gravity 1.020, no albumin, no sugar.

November 8: Dark amber color, acid reaction, specific gravity 1.020, trace of albumin present, no sugar, few pus cells present.

Blood Examinations.—October 30: Leukocytes 7,000, of which 50 per cent. were polymorphonuclears, 43 per cent. small lymphocytes, 5 per cent. large lymphocytes, 2 per cent. unclassified.

November 3: Widal negative (*B. typhosus*).

November 6: Blood-culture negative.

November 10: Leukocyte count 6,800.

November 11: Widal negative (*B. typhosus*). Widal negative (*B. paratyphosus B*). Widal positive (*B. paratyphosus A*).

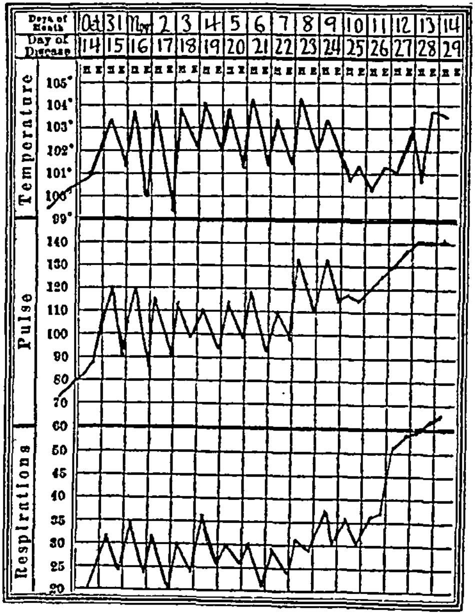
November 13: Blood-culture positive. *B. paratyphosus A* isolated.

POST-MORTEM EXAMINATION

Necropsy done by Dr. Parsons, under the direction of Dr. Waldorf, pathologist to the Hospital of the Good Shepherd, three hours after death. Head not opened. Body that of a poorly nourished man 163 cm. long. Rigor mortis very marked; livor mortis in dependent parts. Pupils dilated and equal.

Peritoneal Cavity.—No free fluid. Peritoneum smooth and glistening. Mesenteric lymph-nodes enlarged. Appendix normal in position and appearance, no adhesions. Foramen of Winslow open. Spleen apparently normal in size and position.

Pleural Cavities.—No free fluid. Lungs apparently normal in position and lobulation. Numerous small adhesions on right side at apex and base and on left side laterally and at base; so firm at base as to strip the pleura from diaphragm when lungs were removed.



Record of temperature, pulse-rate and respiration of patient who died on the twenty-ninth day of disease.

Pericardial Cavity.—About 80 c.c. thin, straw-colored fluid.

Heart.—Weight 285 gm. Left ventricle in systole, right ventricle in diastole. Heart muscle brownish-red. Wall of left ventricle measures 1.2 cm., right ventricle 0.5 cm. in thickness. All valves without evident lesion. Mitral orifice measures 9.2 cm., aortic orifice 6.2 cm.

Lungs.—Right, weight 960 gm. Crepitant throughout, decreased posteriorly and deep red. On section, bloody fluid exudes from cut surface. Tissue very friable. When pinched there is uniform crepitation although this is much less marked than usual. Odor of tissue is foul. There are several areas from 0.5 to 1.5 cm. in diameter where tissue seems to have disintegrated.

Left Lung: Weight 700 gm. Tissue deep red, though everywhere crepitant. On section, condition much the same as in right lung.

Spleen.—Weight 160 gm., not apparently enlarged. Organ somewhat deeper red than usual. On section tissue friable, usual markings not distinct.

Gastro-Intestinal Tract.—Stomach, duodenum and jejunum are without evident lesion. In the ileum there are many rather superficial ulcers opposite the mesentery which have greenish-gray necrotic bases and raised hyperemic margins that extend 2 to 3 mm. from the outer edges of the bases. These ulcers are elongated and their long axes are parallel with that of the gut. None has perforated the bowel. They are most numerous about 1 meter from ileocecal valve. There is one area about 9 cm. long where there are nearly continuous ulcers. Peyer's patches do not seem to be particularly involved. Nearly entire ileum seems more hyperemic than usual. There are numerous pin-point hemorrhages in many areas.

Liver.—Weight 1,720 gm. It is somewhat more red than usual. On section, markings distinct.

Kidneys.—Each weighs 140 gm. They are apparently normal in position and somewhat deeper red than usual. Capsules strip readily. On section, markings are distinct.

Anatomic Diagnosis.—Ulceration and hyperemia of ileum; enlarged mesenteric lymph-nodes; bilateral pneumonitis; bilateral pleuritic adhesions; congestion of spleen, liver and kidneys.

Microscopic Description and Diagnosis.—Ileum: Ulcers involving mucous surface. Apparently do not involve muscle. Peyer's patches not involved. Mucous membrane not undermined by ulcers.

Mesenteric Lymph-Nodes: Hyperplasia. Many endothelial cells present.

Spleen: No hyperplasia of lymphoid elements. Acute congestion present. A few ill-defined areas about 0.1 mm. in diameter in which there is disintegration of the cells and of most of the nuclei.

Lungs: Bronchopneumonia.

Bronchial Lymph-Node: Hyperplasia; many endothelial cells; evidence of phagocytosis of black pigment by endothelial cells.

Liver: Beginning central necrosis. Cloudy swelling of cells near center of lobule.

Kidneys: Cloudy swelling.

BACTERIOLOGIC EXAMINATION

From the blood two days before death and from the spleen, gall-bladder, mesenteric lymph-node and intestine, at necropsy, a rather short, Gram-negative, actively motile bacillus was cultivated and isolated. On agar a fairly abundant gray growth is seen. Bouillon is uniformly clouded. Gelatin shows a gray growth along the stab, and there is no liquefaction present. Litmus-milk inoculated with this organism shows an early and permanent acidity. On potato the growth is invisible. No indol is produced in Dunham's peptone solution. Acid and gas is formed in glucose, but no fermentation is evident in lactose or saccharose. Subjected to the agglutination test with the patient's serum, this organism, as well as a "stock" paratyphosus A culture used for control, is agglutinated in dilutions of 1:40, 1:200 and 1:1000.

The patient's serum tested with "stock" cultures of *B. typhosus* and *B. paratyphosus B* shows no agglutination power in any of the preceding dilutions. Normal serum controls were negative.

Because of its morphology, staining characteristics, and active motility, and the results of growth on ordinary mediums (especially in sugar broth, in litmus milk and on potato), and because of its specific agglutination, the organism isolated in this case is identified as the *B. paratyphosus A*. This identification, in connection with the clinical history and pathologic findings, serves to make possible a diagnosis of paratyphoid fever of the "A" type.

COMMENT

The pathologic anatomy of these paratyphoid infections is interesting and important. Because the mortality rate is low the pathology of the condition is founded on a few cases. In a study of the literature paratyphoid B infections seem to have been the more fatal, consequently more is known concerning the pathologic anatomy of this type, and the post-mortem report in the above described case of the "A" type will be an important addition to the literature, inasmuch as only a few such necropsy reports on paratyphoid of the "A" type have ever been published.

In true typhoid the most evident lesions are confined to the lymphoid tissues. The intestines usually show an involvement of Peyer's patches ranging from a slight swelling to a marked proliferation and even ulceration. The mesenteric lymph-nodes show all grades of proliferation and swelling. The spleen is also involved and shows swelling and congestion. The toxins of the bacilli may cause lesions in various other organs. These specific lesions of true typhoid are not as a rule found in paratyphoid.

From the small number of post-mortem examinations of paratyphoid (only a few of which have been of the "A" type) reported in the literature, it would seem that there are no specific anatomic lesions associated with the disease. The mesenteric lymph-glands are usually unchanged. The intestinal lesions vary from a simple, mild ileocolitis to definite ulceration. These ulcers are usually superficial and as a rule do not involve the Peyer's patches. In fact the Peyer's patches and solitary follicles have shown little or no change in practically all of the cases reported.

On the other hand, splenic enlargement has usually been present and did not differ from that seen in true typhoid. Wells and Scott, in their work on the "Pathological Anatomy of Paratyphoid Fever,"[1] founded on five cases, conclude that "the anatomic changes are simply those of a septicemia, *with splenic swelling,* and occasionally *non-specific* ulcerations in the intestine." In the light of our case this description must be changed to include the possibility of no change even in the spleen.

SUMMARY OF INTERESTING AND ATYPICAL FEATURES OF CASE DESCRIBED

1. Fatal result (most patients recover).

2. Similarity of lesions in intestine with those found in other reported cases, namely, non-specific ulcers, and lack of involvement of Peyer's patches.

3. Enlargement and great increase of endothelial cells in mesenteric lymph-nodes. (These showed little change in other cases.)

4. Normal spleen so far as size and lymphoid elements are concerned. (In practically all necropsied cases, so far reported, the spleen has shown considerable enlargement and change.)

CONCLUSIONS

From a study of this most interesting case, and of the important literature,[2] the following conclusions seem permissible:

1. Paratyphoid is considered rare and not usually fatal. Both of these ideas might be changed with closer scrutiny and study of "Clinical Typhoid" without positive Widal tests and blood-cultures.

2. The spleen is not necessarily enlarged or involved in paratyphoid of the "A" type.

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[1] Wells, H. G., and Scott, L. O.: The Pathological Anatomy of Paratyphoid Fever; Report of a Fatal Case, with Bacteriological Findings, Jour. Infect. Dis., 1904, 72.

[2] Longcope: Am. Jour. Med. Sc., August, 1902. Swan: Am. Jour. Med. Sc., May, 1906, p. 883. Fox: Univ. Penn. Med. Bull., 1905, xviii. Hunt, C. J.: Paratyphoid Fever: A Serologic Study in Relation to the Epidemiology, Arch. Int. Med., July, 1913, p. 64. Proescher, Frederic, and Roddy, John A.: Bacteriological Studies on Paratyphoid A and Paratyphoid B, Arch. Int. Med., March, 1910, p. 261.

3. In health laboratories, or in other places in which these examinations are made, a serum should be tested for paratyphoid agglutinins, both A and B, after the serum has been pronounced negative three times so far as the true typhoid Widal is concerned.

4. More accurate blood studies and cultures should be made in all cases which resemble typhoid.

5. An antiparatyphoid vaccine should be tried in the treatment of the disease, and as a measure of prevention such vaccines should be used either alone or in combination with typhoid vaccine.

Finally, I desire to thank Dr. W. D. Alsever, in whose service this case occurred, for the privilege of making this study and report; to Drs. Waldorf, Preston and Parsons of the Hospital of the Good Shepherd, I am indebted for valuable records of the clinical and pathologic features.

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FURTHER SIMPLIFICATION OF QUANTITATIVE DETERMINATION OF CHLORIDS IN THE URINE *

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Recently Bayne-Jones[1] has published a simplified method for the determination of the total chlorids in the urine, the only apparatus necessary being a stoppered graduated cylinder. His method is an adaptation of the method of Strauss,[2] and does away with the necessity of a specially made and graduated chloridometer. The method depends on the precipitation of the chlorids with a tenth-normal silver nitrate solution containing nitric acid, and ferric ammonium sulphate as an indicator, and titrating back the excess of silver nitrate with a twentieth-normal solution of ammonium sulphocyanate, the whole process being carried out in a stoppered graduated cylinder, and the amount of the chlorids being determined from the amount of fluid in the cylinder at the end of the process, with the aid of a special table computed for that purpose. Bayne-Jones has shown the accuracy of the method, when compared with the Lüttke-Martius modification of the Volhard method, and has shown that the presence of the silver chlorid in the mixture does not affect the final titration. He has also shown that the method is accurate when applied to albuminous urines, without filtration of the albumin.

The method can be still further simplified by adjusting the strength of the solutions to the graduations on the cylinder, so that the reading at the end is practically a direct reading of the number of grams of chlorids per liter of urine, without requiring the use of any tables. The modification also has the advantage of allowing the estimation of any amount of chlorids up to 20 gm. per liter, without requiring dilution of the urine. In this modification the strength of solutions used is the same as of those used in the Arnold modification of Volhard's method.[3] One c.c. of the silver nitrate solution is equivalent to 0.01 gm. of sodium chlorid, or to 0.00606 gm. of chlorin.

For the method as used at present by us the following solutions and apparatus are required:

1. A standard solution of silver nitrate, containing 29.055 gm. to the liter. According to Webster, the chemically pure silver nitrate found on the market is perfectly reliable, and requires only an accurate balance to weigh the exact amount. The formula of this solution is as follows:

Silver nitrate (C. P.)	29.055	gm.
Nitric acid (25 per cent.)	900	c.c.
Ferric ammonium sulphate (iron ammonia alum) cold saturated solution	50	c.c.
Distilled water to	1,000	c.c.

2. A solution of ammonium sulphocyanate (NH_4SCN) of such a strength that 2 c.c. are equal to 1 c.c. of the silver nitrate solution. This is made by dissolving about 7 gm. of the sulphocyanate in 1,000 c.c. of distilled water, and by titration against the standard silver nitrate solution adjusting it by dilution until 2 c.c. are exactly equal to 1 c.c. of the silver solution.

3. A certified, stoppered, graduated cylinder of 50 c.c. capacity. By a series of tests we have found the calibration of the ordinary 50 c.c. stoppered graduated cylinders to be extremely inaccurate. Furthermore, they are graduated only in 1 c.c., and the variations in calibration are too great to allow of accurate results. Bayne-Jones has reached the same conclusion, and we recommend that only the certified cylinders, which are graduated in 0.2 c.c., be used. These are of about the same caliber as an ordinary buret, and the graduations extend over a scale length of about 25 cm., so that differences of 0.2 c.c. or even of 0.1 c.c. are as easily read as from a buret.

The method is carried out as follows:

The urine is allowed to flow from a pipet into the cylinder, which has previously been cleaned and dried, until the bottom of the meniscus is exactly at 5 c.c. The silver nitrate solution is then run in carefully in the same way to the mark 15 c.c. The cylinder is then stoppered, inverted gently several times and allowed to stand for five minutes. If it is not allowed to stand at least five minutes, precipitation of the chlorids will be incomplete, and the reading will be too low. The pinkish color produced by the action of the nitric acid will generally disappear as the following solution is run in, but if the urine be highly colored it is well to decolorize by adding 3 drops of a 10 per cent. potassium permanganate solution, the amount of fluid added in this way being allowed for in the final reading. After standing, the sulphocyanate solution is now run in, preferably from a siphon or from an aspirating bottle with an opening at the side. In this way the sulphocyanate solution may always be kept easily available on a shelf in the laboratory. The sulphocyanate is run in gradually, the cylinder being stoppered and inverted several times after each addition. The rapidity with which the sulphocyanate may be added may be gaged by the rapidity with which the color produced by each addition disappears, the addition being made about 3 drops at a time toward the end of the reaction. This is continued until the pinkish color produced by the sulphocyanate just fails to disappear when the tube is inverted and remains permanent. The stopper is then removed, the cylinder allowed to stand for a few moments, until all of the fluid has run down from the sides, and a reading of the amount of fluid in the cylinder is then taken.

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* From the Laboratory of Pharmacology, Medical Department, University of Oregon.

[1] Bayne-Jones, Stanhope: Simplified Methods for Quantitative Estimation of Chlorids in the Urine, Arch. Int. Med., July, 1913, p. 90.

[2] Strauss: Praktische Winke für die chlorarme Ernährung, Berlin, 1910.

[3] Webster: Diagnostic Methods, 1909, p. 193.

If no correction is to be made, as for the addition of potassium permanganate, the number of cubic centimeters of fluid in the cylinder subtracted from 35 now gives the number of grams of chlorids per liter of urine, expressed in terms of sodium chlorid. If V be taken as the final volume of fluid, the result may be expressed by this equation:

$$35 - V = \text{grams of NaCl per liter of urine.}$$

The calculation of this is simple. The 10 c.c. of silver nitrate solution added to the urine is capable of precipitating 0.1 gm. of sodium chlorid. If no chlorid be present it will require 20 c.c. of the sulphocyanate solution to precipitate the silver nitrate, and we have in the cylinder 5 c.c. of chlorin-free urine, 10 c.c. of silver nitrate solution, and 20 c.c. of sulphocyanate solution, totaling 35 c.c., which is the maximum that V may attain. When chlorids are present in the urine, as they invariably are, their amount is indicated by the amount of silver nitrate they precipitate, this being determined indirectly by titrating the amount they fail to precipitate. As each cubic centimeter of silver nitrate requires 2 c.c. of sulphocyanate for precipitation, each 2 c.c. less than 20 of sulphocyanate solution needed for the final titration represents the presence of 0.01 gm. sodium chlorid in the urine used, or each cubic centimeter represents 0.005, or 1/200 gm. As 5 c.c. of urine, or 1/200 liter of urine was originally used, each cubic centimeter of sulphocyanate less than 20 represents 1 gm. of sodium chlorid per liter, and as 15 was the zero point on the scale for the final titration, $35 - V =$ the number of grams of chlorids per liter. In the case of very dilute urines of low specific gravity it is better to start with 10 c.c. of urine, which modifies the formula to

$$\frac{40-V}{2} = \text{grams of chlorids per liter.}$$

To test the accuracy of this method we have controlled a series of estimations with a method of known accuracy, the Arnold modification of Volhard's method as described by Webster,[3] and the results are herewith tabulated.

NEW METHOD COMPARED FOR ACCURACY WITH THE ARNOLD METHOD

	Grams NaCl per Liter	
No.	Arnold Method	New Method
1	14.2	14.4
2	10.1	9.9
3	0.8	0.8
4	5.5	5.3
5	7.9	7.7
6	5.6	5.6
7	3.9	3.8
8	7.7	7.8
9	7.2	7.1
10	0.5	0.66
11	0.4	0.6
12	13.1	13.1
13	6.0	6.0
14	9.3	9.4
15	11.0	11.0

The method is thus accurate to within 0.2 gm. per liter, when compared with a more complex titration method which is sufficiently accurate for clinical purposes, and can be carried out in ten minutes by any skilled laboratory helper with only the one piece of calibrated apparatus, and it requires no tables for the computation of the results.

Our thanks are due to Miss Hazel Altman of Dr. Selling's laboratory for many of the controlled estimations.

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Knowledge.—Every mind was made for growth, for knowledge, and in its nature is sinned against, when it is doomed to ignorance.—Channing.

TUMOR OF THE MIDDLE CRANIAL FOSSA INVOLVING THE GASSERIAN GANGLION *

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Cases of tumor of the middle cranial fossa involving the gasserian ganglion are rarely seen and but rarely reported in the literature.

In 1908 Spiller[1] reported two cases which had recently come under his observation. He also reviewed one case presented by Keen, Dercum and Spiller, and one reported by Hofmeister and Meyer in their paper on "Tumor of the Gasserian Ganglion." A few other cases have been noted in the literature.

The case here reported was a tumor of the middle cranial fossa involving the gasserian ganglion.

History.—O. R. (Case A77175), a well-developed man, aged 21, was examined Dec. 10, 1912. Family history was negative for tuberculosis or other chronic diseases, and personal history good, without evidence of syphilitic infection or alcoholic excesses. Three enlarged upper cervical glands had been discovered on the right side of neck twenty-one months previous to examination. Three months later pain developed anterior to the right ear, and the local physician excised the glands, which were thought to be tuberculous, although no microscopic examination was made. From that time until the patient came for consultation pain had been constant in the site of the trouble with intermittent tic-like paroxysms over the entire distribution of the right fifth nerve. The paroxysms occurred once or twice a day and lasted from a few minutes to an hour. Momentary attacks of diplopia and of indefinite objective vertigo were complained of. Following the operation on the glands there had been some stiffness in using the lower jaw. Six weeks previous to our examination deep alcoholic injections of the branches of the fifth nerve had been made with some relief for one week. Two weeks following this procedure an operation was done in the right temporal region, but there were no data to show what was accomplished. For one week prior to coming to our clinic there had been a drooping of the right upper lid.

Examination.—General examination disclosed nothing of note. All reflexes were normal; there was no ataxia in station or gait. Mentally the patient was rather dull and apathetic, and answered questions slowly. A superficial survey of the head revealed a scar on the cheek following the use of a hot-water bottle, as well as those left by the previous operations. A small trophic ulcer was apparent on the right side of the upper lip below and to the right of the nasal ala. The sense of smell seemed to be slightly diminished on the right side. There was a marked ptosis of the right upper lid. The right pupil was dilated and showed no reaction to light or accommodation. There was partial paralysis of all the extrinsic muscles of the right eye, but this was less evident in the external rectus. Vision in the right eye was 20/50 with slight contraction of the fields. The optic nerve-head was pale. Vision in the left eye was 20/20; the fundus, extrinsic muscles, reflexes and fields were normal.

Careful tests showed anesthesia and analgesia of the skin and mucous membrane supplied by the first and second divisions of the right fifth nerve with hypesthesia and hypalgesia in the distribution of the third division. There was also complete anesthesia of the right cornea. A slight exaggeration of the jaw-reflex was noted; the pharyngeal reflex was apparently normal. The sense of taste was absent in the right anterior portion of the tongue. The tongue could not be protruded beyond the lips, as it was impossible to separate the teeth more than ½ inch, which condition was probably the result of contracted scars following the previous operations. No weakness of the tongue-muscles was evident. There was a definite decrease of strength in the muscles used in closing the right side of the jaw. A specimen from a slight bulging of the right side of the nasopharynx showed lymphatic tissue only. There was a slight bilateral catarrhal deafness. The sinuses were objectively normal. A roentgenogram of the skull disclosed a trephine opening about ½ inch in diameter in the right temporal region. Diagnosis was made of a tumor of the middle cranial fossa involving the gasserian ganglion.

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* From the Mayo Clinic, Rochester, Minn.

[1] Spiller: Am. Jour. Med. Sc., 1908, cxxxvi, 712, 725.

Operation.—June 6, 1913, an operation was performed in the Mayo Clinic by Dr. Beckman. The Hartley-Krause method exposed a hard mass below the right temporal lobe. The extent of the tumor could not be determined and it was considered inoperable. A specimen examined microscopically showed the tumor to be a small round-cell sarcoma.

The patient died a few months later. No necropsy data were obtained.

The important features in this case are: (1) the enlargement of the right cervical glands; (2) the constant dull pain just anterior to the right ear with paroxysms of sharp pain which involve the entire distribution of the fifth nerve; (3) the absence of symptoms of general intracranial pressure, such as headache, vomiting, choked disk, etc., unless the occasional vertigo and the mental hebetude are considered symptoms; (4) the definite localizing signs such as the anesthesia, the loss of the sense of taste on the right anterior portion of the tongue, the partial paralysis of all the right extrinsic eye-muscles with a nearly complete ptosis, the pallor of the right optic nerve-head, and the large immobile right pupil.

It is possible that the anesthesia became more definite following the alcoholic injections which had been given six weeks previous to our examination. As would be expected, considering the absence of any signs of general intracranial pressure, there was no improvement following the exploration.

In the cases reported by Dercum, Keen and Spiller, Hofmeister and Meyer, and Spiller there was enlargement of the lymphatic glands of the neck. In our case, although no microscopic examination was made by the physician who excised the glands, the history of glandular enlargement just previous to the onset of the symptoms gives strong presumptive evidence of their metastatic character.

The fact that the glands were enlarged three months before the onset of pain makes it probable that the tumor originated from the dura and had gained considerable size before it involved the gasserian ganglion.

SURGICAL TREATMENT OF URETHRORECTAL FISTULAS

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Under the present methods for the surgical treatment of urethrorectal fistulas about 25 per cent. of the cases terminate successfully. This low rate of recoveries is not surprising when it is remembered that the urethra is a curved channel carrying water under pressure and that the fistula is usually located at the most tortuous part. In addition to this, the rectum is in close apposition to the prostate and the recto-urethralis muscle anchors the ampulla of the rectum at a short distance from the membranous urethra.

The standard operative procedures seem faulty in principle.

No one would try to repair a leak in the retaining wall of an irrigation ditch, especially on a curve, by tearing down the sound, natural wall for some distance close to and up into the leak, if this could be repaired in the line of leakage. Still, this is the principle underlying the operative methods usually employed. The perineal body is split at its center, the cut extending back to or into the rectum, in front to the bulb, and in depth down to the urethra; thus, a sound retaining wall many times the length of the fistulous opening is laid open—a wall which is known to be hard to make water tight by suturing. The fistulous tract is cut flush with the urethra and the opening closed by a continuous suture. The condition then is that instead of one large opening, there are several small holes, not water tight, between the sutures. After the removal of the fistulous tract and repair of the rectum, the wound is sutured. The result is that in 75 per cent. of the cases there are, instead of one leak, two—a rectal and a perineal.

The following technic has been worked out and found very satisfactory:

After the usual preparatory treatment, such as curing of strictures, etc., the field of attack is just in front of the rectal wall up to and above the fistula; and then in the line of the fistula. A catheter is inserted into the bladder and retained for several days. If the fistula is located low down, the rectum is loosened from its bed in front and to the sides, while in fistulas high up, the rectum is dissected loose in its entire circumference. If more room is required, the postanal tissue is cut through to the coccyx, which may also be turned back. An incision through the skin is made in front of the anus either half way around, or encircling the anus and back to the coccyx. The sphincter, left attached to the skin, is cut through in front or in front and posteriorly. If the fistula is above the levator ani, this is cut close to the rectum and so also the recto-urethralis and if necessary the deep perineal fascia. This exposes the prostate, bladder and the peritoneal pouch. The dissection should be up to and a short distance above the location of the fistula. As the fistula is reached, it is tied and cut close to the rectum and the fistulous tract is dissected loose up to the urethra; if this is impossible, it is curetted up into the urethra. A purse-string suture is placed around the fistula close to the urethra in the tissue surrounding the tract and tied, leaving the ligature ends long. The tract is removed. Several flaps now are dissected loose alternately on each side of the tied urethral end and stitched in place, one on top of the other, each suture-line being located at a different plane. The long ends of the urethral tie are drawn through the center of the first flap and tied before the flap is stitched into place. The principle here is not only to build up a water-tight, but also a thick wall, thereby bringing the rectum farther away from the urethra. The rectal tie is buried by two or three pleats of the rectal wall. As the ends of the fistulous tract, where they open into the urethra and the rectum, are, as a rule, funnel-shaped, these funnels should be tied and not cut; if they are cut, two large openings are produced which are hard to make water-tight by stitching, while if they are tied, this makes the opening water-tight. If there should be a large opening into the urethra which cannot be tied off, the urethral edges should be apposed by interrupted sutures, the sutures tied and their ends drawn through the center of the first overlapping flap and tied. It generally spells failure to turn up a flap from each side of the urethra, their edges meeting and sutured opposite the urethral suture-line. This is like putting one sieve on top of another. After a thick wall has been built up between the rectum and the urethra, the rectum is partly twisted and a sound part is sutured to the built-up wall. The levator ani and sphincters are sutured in place. If the postanal space was entered, a good-sized drain is left in there.

If at the time of the operation there should exist both a urethrorectal and a urethroperineal fistula, the best policy is to repair the urethrorectal fistula first, waiting for a future time to repair the perineal fistula, because there would be a too extensive injury inflicted on the periurethral wall in one sitting, and because an open drain through the perineum will greatly assist in relieving the repaired part, until thoroughly healed, from the expansive pressure of the urine. A perineal fistula is easier to repair later on. It is a great temptation to repair the two in one sitting, but the result is generally a failure. In repairing the perineal fistula, the same overlapping, building-up method will give good results.

THE PRESENCE IN THE URINE OF DIALYZABLE PRODUCTS REACTING TO NINHYDRIN

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In a recent article in The Journal Warfield[1] says:

> It occurred to me that if there was a specific ferment in the blood-serum which was elaborated to split up the products derived from the placenta, syncytium especially, there should be also in the blood-waste, products of the metabolic activity of the growing fetus. These substances had to leave the body by some route and the most logical route was the urinary excretion. These products should be peptones and amino-acids, they should dialyze out and one should then be able to find them by means of the ninhydrin reaction in the dialysate. It was found that actually such is the case.

In support of this theory, tests on seventeen cases of pregnancy are cited, all of them giving positive results; seven cases in the puerperium were tested with the result that "the eleventh day was the earliest to show a negative reaction, while one still showed a faint reaction on the seventeenth day." If correct, these observations would be of the utmost importance and would greatly simplify the "Abderhalden test."

I have carried out a series of reactions in order to prove or disprove these conclusions. The water containing the dialyzers, the glassware, pipets, etc., were all carefully tested for the presence of the ninhydrin reaction before being used. The work was done with the dialyzing thimbles supplied by Parke, Davis & Co., and these had been proved to be impermeable to all but amino-acids by repeated testing and also by a long series of tests with the original technic. Three different solutions of ninhydrin were used.

February 10 the urines of six positively pregnant women were tested for the presence of the ninhydrin reaction, without dialyzing, by boiling 2 c.c. of urine with 0.2 c.c. of a 1 per cent. solution of ninhydrin. The accompanying table shows the results.

It will be observed that whenever the urine was strongly acid, the ninhydrin reaction was negative. This indicates that the acidity inhibits the reaction, a fact that is already well known. An attempt was made to bring out the test by neutralizing these strongly acid urines, but the reaction remained negative. It was further observed that, although a urine may give a strongly positive ninhydrin reaction, if made strongly acid by the addition of acetic acid the reaction will disappear and will not reappear when the urine is exactly neutralized by the addition of sodium hydroxid. The same day, those urines that had given negative tests before dialyzing, were placed in dialyzing thimbles and the dialysates tested at the end of twenty-four hours. All three, that is, Nos. 2, 5 and 6, gave strongly positive reactions with ninhydrin.

February 11 the urines of three women known to be pregnant were dialyzed. At the end of twenty-four hours the dialysate gave a positive reaction in each instance. These urines did not contain albumin and were acid in reaction.

February 12 the urines of ten non-pregnant women suffering from various surgical conditions were dialyzed, and the dialysates tested for the presence of the ninhydrin reaction. Without exception, these urines gave distinctly positive reactions. The reactions of these urines to litmus varied from alkaline to acid, the majority were acid. No matter what the reaction of the urine before dialyzing, however, the dialysate is always neutral to litmus. These urines were voided just before luncheon, and none of them gave a positive reaction with the ordinary tests for albumin.

NINHYDRIN TEST OF URINES FROM SIX PREGNANT WOMEN *

No.	Reaction	Ninhydrin
1	Acid	+
2	Strongly acid	—
3	Neutral	+
4	Neutral	+
5	Strongly acid	—
6	Strongly acid	—

* All urines were albumin-free.

February 13 the urines of four non-pregnant women and two men were tested. One of the men had nephritis, the other was normal. The dialysates from all of these urines gave positive reactions with ninhydrin.

February 14 the urines of four healthy men were tested; the dialysates giving negative reactions.

In view of these results it was thought that the amino-acids present might be accounted for by the action of bacteria on pus and other albuminous matter present in the urine, especially in that of women. To avoid this, the urine was thoroughly boiled as soon as voided, all material used in the tests was sterilized by boiling and the tests were set up under aseptic precautions. Under these conditions ten urines from non-pregnant women suffering from various surgical conditions and two from known pregnant women, were tested. At the end of twenty-four hours the dialysates from eleven of them showed positive reactions with a freshly prepared solution of ninhydrin, and one of them a negative reaction. The case giving a negative reaction was one of carcinoma of the breast.

In regard to the presence of dialyzable substances reacting to ninhydrin in the urines of others than pregnant women, Dr. Warfield says:

> In order to show that in normal urine there are no dialyzable substances which give a positive reaction with ninhydrin, a number of urines from healthy persons were tested. These gave no color reactions.

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[1] Warfield, Louis M.: The Presence of Dialyzable Products Reacting to Abderhalden's Ninhydrin in the Urine of Pregnant Women; a Preliminary Report, The Journal A. M. A., Feb. 7, 1914, p. 436.

The conclusions to be drawn from the few tests that I have performed are:

1. After dialyzing the urines of pregnant women the dialysate always gives a positive reaction to ninhydrin.

2. After dialyzing the urines of non-pregnant women, the dialysate frequently gives a positive reaction to ninhydrin; occasionally, under the same conditions, the urines of men give positive reactions.

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VOLUNTARY DISPLACEMENT OF THE EYE

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The following unique case was called to my attention about three months ago.

E. J. H., aged 30, a native American, soldier, unmarried, was admitted to the Government Hospital for the Insane April 2, 1909, with dementia praecox. His previous history was unimportant; he had completed grammar- and high-school courses and two years in a university.

The patient entered the army in 1906. During the year 1908 he showed evidence of lack of attention and inability to do his work properly. He became very much depressed and "blue"; was worried about his mental condition, homesick, and anxious to return home. He became careless of his personal habits, was forgetful and unable to perform simple duties. He stated that previously people had called him insane.

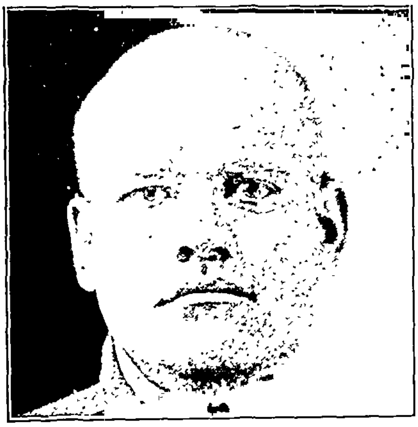

Fig. 1.—Left eye in orbit; note its slight prominence and widening of the palpebral fissure. No strabismus; fixation of left eye equal to right.

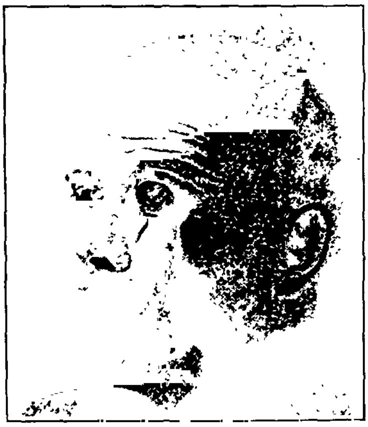

Fig. 2.—Eyeball forced out of orbit upward. No evidence of pain.

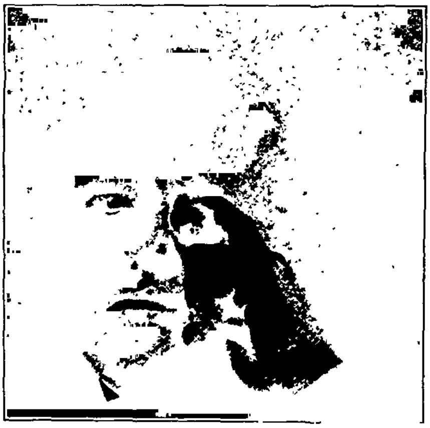

Fig. 3.—Eyeball forced downward well outside of lids.

Since his admission to the hospital his condition has remained about the same. When admitted his pupils reacted to both light and accommodation. A history note dated Jan. 18, 1913, records the patient's mannerism of holding his hands to the side of his head and, in a characteristic way, with finger-tips pressing the lower lids downward, exclaiming, "Doctor, I am just an old, crazy bum, that's what I am."

About six or seven months ago the patient began to devote attention to his left eye, and, by pushing the index-finger in beside the eyeball, the conjunctiva and muscles were gradually stretched until he was able to force the globe out of the socket. To do this seemed to afford him a certain amount of satisfaction, and that eye became his plaything. It was not many weeks before he was able to extrude the eye as shown in Figures 2 and 3.

I first examined this patient about three months ago. The left eye, in a quiescent state, was slightly more prominent than the right, projecting about 4 mm. beyond the plane of the latter. The pupils were about equal in size and regular in shape. The right pupil responded normally to light and accommodation. The left pupil responded to light consensually but not directly. The cornea of the left eye was perfectly clear, the anterior chamber equal to the right in depth; there was very little conjunctival injection and blepharitis marginalis of the left eye. The left fundus was easy to examine, and showed complete atrophy of the optic nerve, but no signs of active inflammation. There was but little change in the caliber of the retinal vessels, the arteries being slightly smaller than normal and the veins slightly dilated.

When asked to show me what he could do with his eye the patient placed his index-finger on the lower left eyelid and, with slight pressure, forced the eye outward and upward from the socket. The globe was at least an inch beyond its normal plane, as shown in Figure 2. When the finger was removed from below the eye, the globe, by the action of the muscles, was redrawn into the socket. The return of the eye was rapid until about three-quarters of the way back, then more slow, the muscles restoring it to the position shown in Figure 1. By making a sort of hook with his index-finger and placing it above the eye the patient could bring the eye outward and downward along the side of his nose, as seen in Figure 3. The manipulation of the eye seemed to cause the patient not the slightest pain or inconvenience, in fact, he stated that he felt no pain whatever. Fixation was perfect, as can be seen by a glance at Figure 1, both the left and right eyes looking straight into the camera.

One of the most difficult features to understand in this case is how the muscles retain their tone, after all the stretching to which they have been subjected. So far no attempt has been made by the patient to displace his right eye.

The Farragut.

A CASE OF INFANTILE UTERUS AND APPENDAGES WITH RESULT OF TREATMENT

HENRY R. ELLIOTT, M.D., WASHINGTON, D. C.
Associate Professor of Physiology, George Washington University
Department of Medicine

Patient.—Mrs. M., white, aged 27, married five years, has never been pregnant, and is anxious to have a child.

Examination.—General condition good, muscular, not fat; figure like that of a boy of 18; narrow hips, undeveloped breasts. Heart and lungs normal. Uterus about size of English walnut, ovaries not palpable. (Has been examined by gynecologist who told her she could never have a child.) Pelvis normal. Has had menstrual show of a few drops three or four times during her life. Epistaxis very free at times. Sexual feeling very slight, if at all, and only very seldom. Several members of family have had menstrual disorders, but none of this type.

Treatment and Result.—April 6, 1912: Patient was put on extract of luteum tablets, one three times daily for a week, two three times daily for another week, then returning to the first dosage. Uterine massage was given by forcing organ against and kneading it through abdominal wall, April 6, 12, 19, 27, and May 3 and 10.

May 20, 1912: Menses appeared with fair flow for a day. Patient has taken on quite a little weight and feels well. Massage has been stopped. Extract of luteum is continued.

Patient had sensation of approaching menses in June, but only a pink show. She had mild epistaxis. General condition is good; she seems to be rounding out. Becoming discouraged, patient abandoned treatment.

Extract of luteum treatment was advised and started again in September, 1912. Uterus seems larger and cervix longer than in June. Last part of October patient had slight menstrual show, first since June.

Nov. 3, 1912: Patient noticed more sexual feeling last month.

Pregnancy.—Nov. 25, 1912: No menses since show in October. Patient very much stouter, breasts enlarged, uterus larger, cervix longer. Pregnancy suspected and cautions given.

Jan. 24, 1913: Uterus much larger, size of large pear, cervix long and firm. Breasts much larger; hips larger; general appearance of woman's figure instead of boy's. Side view, prominence above pubes, as in three and a half to four months' pregnancy.

Feb. 1, 1913: Patient thought she felt motion. Breasts quite large, areola darker.

Feb. 9, 1913: Patient felt motion distinctly.

Feb. 14, 1913: Patient noticed fluid in breast. Pregnancy continued normally until May 26, when miscarriage threatened after strenuous day of house-cleaning.

July 2, 1913: Uterine pains started at about 4 a. m.; duration of about fifteen seconds and about half an hour or more apart. At 7:30 a. m., pains were twenty minutes apart, rather regular, lasting one-half minute, os slightly open. Patient was sent to George Washington University Hospital at about 9 a. m. Pains were ten minutes apart, harder, and lasting about three-quarters to one minute. Expulsion pains, very strong, lasting from one to two minutes, began about 3:30 p. m. At 6 p. m. patient was delivered normally of a boy weighing 6 pounds, 2 ounces. There was no tear of cervix or perineum. Placenta delivered ten minutes later normally. Mother and baby made an uneventful and perfect recovery and left the hospital in two weeks.

Nov. 5, 1913: Baby well, strong and good, weighs 14 pounds. Mother's condition excellent; has retained her weight and has nursed the baby from birth.

The Farragut.

EASILY PREPARED DILUTING FLUID FOR COUNTING RED CELLS

James G. Callison, M.D., New York

Text-books on clinical diagnosis usually give two diluting fluids for making the erythrocyte count in blood-work. These are Toisson's and Hayem's solutions. Toisson's fluid is difficult to prepare, as weighing the stipulated 25 mg. of methyl violet requires great care to secure the necessary accuracy, and more delicate scales than the average laboratory possesses. Then it is not always permanent, as molds may grow in it, forming precipitates. Hayem's solution has no added coloring-matter, and so the cells are not brought into clear relief. With this fluid it is also difficult to differentiate the white and red cells. I have for some time been using a diluting-fluid that is easily prepared, keeps permanently, and has all the advantages of either Toisson's or Hayem's solutions. The formula follows:

Loeffler's alkaline methylene blue.........	1.	c.c.
Liquor formaldehydi......................	1.	c.c.
Glycerin	10.	c.c.
Ammonium oxalate (neutral)............	1.	gm.
Sodium chlorid	2.5	gm.
Distilled water	90.	c.c.

The various ingredients are added to the distilled water and allowed to stand until solution occurs. After being filtered, the preparation is ready to use. This gives a diluting-fluid of specific gravity about 1.045—sufficiently heavy to prevent a too rapid sedimentation of the red cells. If for any reason a diluting fluid of less specific gravity is desired, the glycerin and sodium chlorid may be reduced proportionally until the desired density is obtained. The preparation is permanent, easily prepared, and brings out the red cells in sharp relief, making the count easy. The red and white cells are also well differentiated.

128 East Fifty-Seventh Street.

A CASE OF DORSAL DISLOCATION OF PROXIMAL PHALANX OF GREAT TOE

Don W. Deal, M.D., Springfield, Ill.

C. T., aged 14, from Tower Hill, Ill., came into my service with a painful and swollen foot due to a horse falling on it. Examination showed marked deformity of the right foot, and suspected fracture with dislocation. A roentgenogram by Dr. Fred O'Hara disclosed a dorsal dislocation of the proximal phalanx of the great toe, with a plantar displacement of the metatarsal, and a fracture of the distal end of the second metatarsal bone. Though Malgaigne calls attention to the fact that four out of ten cases of this type are irreducible, reduction under general anesthesia was readily accomplished and the end-results are perfect.

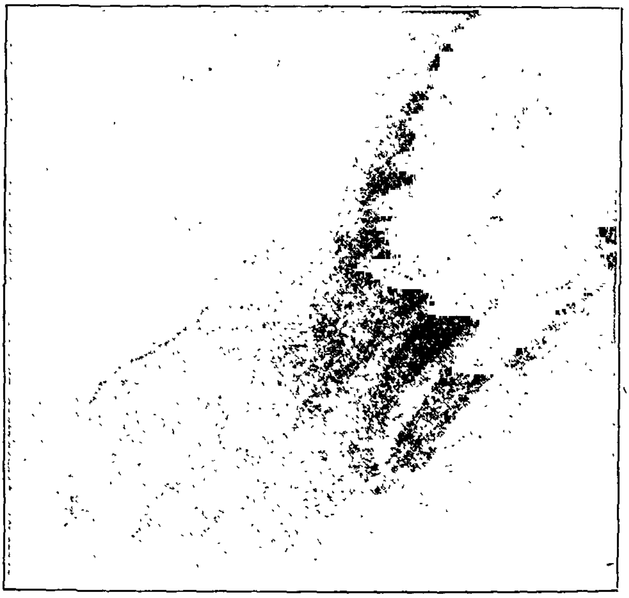

Fig. 1.—Dorsal dislocation of proximal phalanx of great toe.

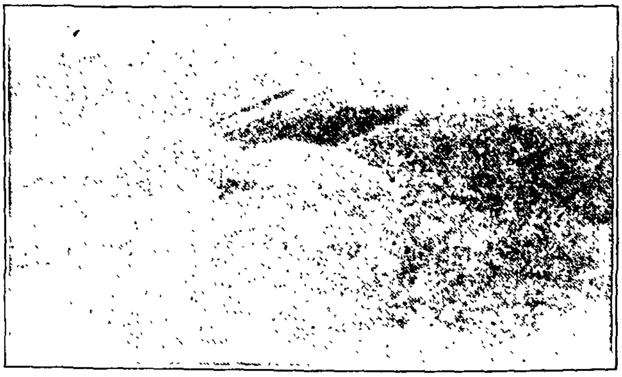

Fig. 2.—Same case after reduction.

Skillern[1] refers to the rarity of the condition in his report of a case, and I am desirous of adding my case to those already reported, which now total twenty.

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[1] Skillern, P. G.: A Case of Dislocation of Proximal Phalanx of Great Toe, The Journal A. M. A., Dec. 6, 1913, p. 2063.

New Instruments and Suggestions

A STERILE ELECTRIC ENGINE FOR BONE-CUTTING

Walter G. Stern, M.D., Cleveland
Orthopedic Surgeon to the Mount Sinai Hospital and to the East Side Free Dispensary

High-speed, rotating bone-cutting instruments such as circular saws, drills, reamers, etc., have not been universally taken advantage of in bone surgery because of the fact that some sterile means of driving these instruments must be provided. The flexible cable-driving shaft, of the type formerly used by dentists, is not entirely practicable because it is prone to "freeze" or break; there is little freedom of motion because the motor must be kept away from the operative field; and also since it has but little weight, the saw will often override and slip unless considerable pressure is used.

Surgical and electric instrument makers have attempted to produce a practical sterilizable electric motor for the purpose of directly attaching the cutting instruments to it; but even these costly enamel wire motors are unreliable, and are apt to develop short circuits and other ills after boiling. Being acquainted with the small, light electric hand-drills used in the steel and iron building-trades, I have adopted for use in bone surgery, at a very small cost over the original price of the drill, one form known as the Duntley Universal Electrical Drill, No. 000 (Fig. 1).

This drill is fitted with a removable universal chuck which will firmly grasp and automatically center all manner of cutting instruments of any size up to ⅜ inch in diameter at the shank. (The motor is of the universal type and can be run on either direct or alternating current at 110 volts).

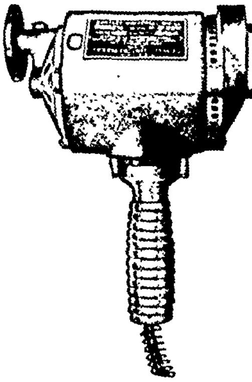


Fig. 1.—Duntley universal electric drill.

Few changes are needed in this drill as it is found in the machinist's trade. The chuck should have its knurled collar ground smooth, and together with its bevel gear key should be nickel-plated. The electric cable should be cut in two and the drill end fitted with the female half of a "separable" electric connection. The other half of the cable should be fitted with the male part of this connection. Another male half of a similar separable connection should be fitted, instead of wires, with a hook to which a sterilized lead plumb bob is to be attached, so as to allow the electric cable to slip readily through the long canvas tube.

Two canvas bags are provided; a long tube, 4 inches in diameter with four tapes at its upper end, and a square bag just fitting over the body of the motor, provided with four tapes at the open corners and a tape on either side of the copper grommet-hole. The latter is made at the upper end of the front of the bag so that the tapered shaft which is to carry the chuck can protrude. These bags are made out of the very finest quality of 8-ounce United States Army canvas, and the copper grommet is just large enough to fit accurately at the collar of the tapered shaft. These grommets are used by all awning, tent or sail makers, who can easily make such bags at a very small cost.

My method of using this electric apparatus is as follows: The chuck, key and lead plumb bob are boiled with the instruments, and the canvas bags sterilized with the dressings. Previous to the operation, the tapered shaft is cleaned and sterilized by running the motor and polishing it with a gauze sponge wet with phenol (carbolic acid) solution; it is further sterilized with a sponge wet with alcohol, and then covered with sterile gauze. (The alcohol will not injure the ball bearings of the shaft). After the usual preparations, the nurse opens the dressings and hands the operator the long tube which he and an assistant hold open with the tapes. A fourth person fits the sterile plumb bob to the hook of the male half of the separable connector and this half to the female connector on the cable leading from the drill. He then lets the weighted cable down through the tube, firmly holding the drill horizontally with one hand while he manipulates the cable with the other. After the handle is covered up to the make-and-break switch, the bag is firmly tied to the handle. The operator now seizes the tube firmly at the handle and inverts the drill and slips it into the open end of the larger bag, which is held by the nurse and assistant by means of the four tapes. These are then tied about the tube, and the tapered shaft slipped through the grommet and at once capped with the chuck. The upper tapes are tied and the chuck firmly seated on the shaft by a blow from the mallet, and the key is inserted into its hole in the chuck. Any desirable instrument (in the illustration, a circular saw) can be firmly grasped and locked in the chuck by a few turns of the key. The fourth person now removes the half of the separable connector carrying the plumb bob and slips on the joint carrying the other part of the cable, which has previously been connected to some electrical socket. Electric cords of any length can be used.

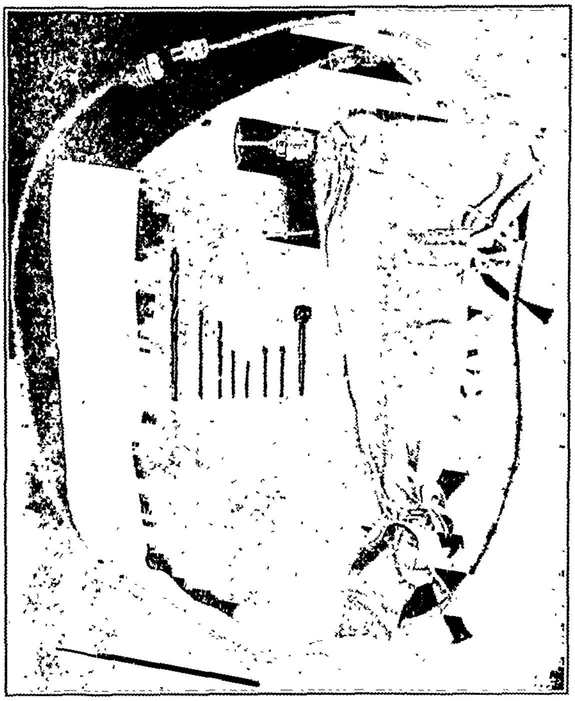


Fig. 2.—Electric engine encased in the canvas bag. Chuck in place holding rotary "buzz-saw." Some of the burrs and reamers used with the engine.

In this way there is absolutely no unsterilized surface near the field of operation. I have used my apparatus sixteen times without any infection resulting, making a fairly conclusive test as to sterility. The whole operation of loading the bags ought not to take more than five minutes.

Fig. 3.—Cut made with circular saw. (Print slightly retouched.)

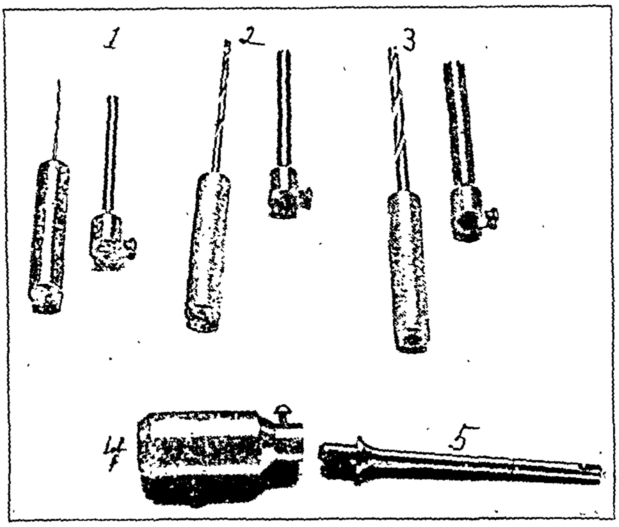
Any shape of rotating cutting-tool can be used. For drilling holes, ordinary slow-speed twist drills, which can be purchased in all sizes from 1/64 inch in diameter and upward, are preferable. Wood reamers of all sizes can be fitted, and all sorts and sizes of dental and vulcanite burrs, drills, reamers, etc., can be used as easily in bone as in dental surgery. Circular saws of all sizes, single or double, can be used. The best size is about 1¼ inches in diameter and as thick as a good quality visiting-card. Such a saw can be furnished by any good saw sharpener at a very small cost. It is not necessary to nickel-plate these instruments if they are properly dried after operations. Dull instruments may be resharpened by being immersed in dilute nitric acid until the edges are restored. With such a machine it is very easy to sever bones with a straight or curved cut, cut out all manners of grafts or slots in bone cleanly and quickly, clean out hard, eburnated osteomyelitis cavities, ream out marrow cavities, cut through ankylosed joints, freshen up ends of old ununited fractures, drill holes for nails and screws, trephine the spine or skull, or cut off exostoses. The cuts are remarkably clean and sharp and there is no splintering or chipping of bone as when a gouge or chisel is used.

821 Schofield Building.

INSTRUMENTS FOR THE MANUFACTURE OF AUTOGENOUS BONE NAILS, PEGS AND GRAFTS

HUGH H. TROUT, M.D., AND R. L. RHODES, M.D., ROANOKE, VA.

In the accompanying illustration 1, 2 and 3 represent twist-drills of three sizes and the corresponding reamers for the manufacture of bone nails; 4 is a chuck to receive the drills, and 5 the spindle which receives not only the chuck but the reamer as well. These reamers have a slightly wider diameter on the inner side at the base than they have at the cutting end; preventing any binding or twisting of the nail. In obtaining the nails it is advisable to utilize the bones removed from the groove, or at least to make them in the long diameter of the bone if no groove is made. When made in this manner the nail is far stronger than when made transversely.



Instruments for the manufacture of autogenous bone nails, pegs and grafts: 1, 2 and 3, twist-drills of three sizes and the corresponding reamers for the manufacture of bone nails; 4, chuck to receive drills; 5, spindle which receives chuck and reamer.

Of course, these instruments are operated by means of an electric motor and we find one with a friction-driven shaft less apt to bind and more even in action.

We have now employed these nails, both as intramedullary pegs and as a means of holding bone-grafts in position, in a sufficient number of fracture cases to appreciate their great value.

APPARATUS FOR ENDOSCOPIC GALVANO-CAUTERY OPERATIONS ON THE VESICAL ORIFICE

H. MCCLURE YOUNG, A.B., M.D., ST. LOUIS
Assistant Surgeon to Outpatients, Washington University Medical School

This apparatus is intended primarily for operations on the moderately hypertrophied prostate. It consists of a Braasch direct-vision cystoscope for which operating windows with a hole for the introduction of the cauteries have been made for me by the manufacturers. These cauteries I have had made in two forms, the cautery knife and the cautery curet. As the electrode does not readily pass through the hole in the operating window, a separate window has to be provided for each cautery. These cauteries are to be used under water and, therefore, certain special precautions have to be observed in their manufacture. They must be absolutely impervious to water. If the slightest trace of moisture leaks into them it will cause a short circuit. The distal end requires very particular attention. It must be sealed in a manner to render the instrument absolutely water-proof. An ordinary cement will not do, for it is porous. My electrician encases the inner electrode in fine rubbing tubing. Each cautery must be carefully tested before use.

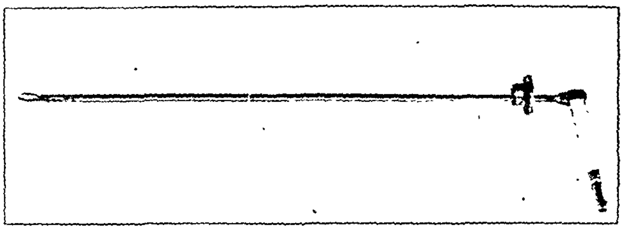


Fig. 1.—The cautery curet.

The surgeon having previously determined that his case is one suited to this technic, will introduce his Braasch cystoscope as for an ordinary cystoscopy. No preliminary washing of the bladder is necessary. Having found offending protuberances on middle or lateral lobes, he will introduce his cautery curet, which, of course, has been carefully tested beforehand and his transformer set at exactly the point necessary to heat it properly. The irrigating fluid is permitted to flow through the cystoscope, and the curet is placed firmly against the tissues which it is desired to remove. The current is now turned on and a ribbon of tissue, corresponding to the size of the curet, is cut out. As this ribbon of tissue ordinarily adheres to the curet, it may be removed, the instrument reinserted and the maneuver repeated. This may be continued indefinitely. Bleeding cannot interfere with the vision for the reason that the irrigation carries all blood and débris back to the bladder, thus providing the surgeon always with a clear field. This cystoscope is also an excellent urethroscope for the posterior urethra, and the surgeon can therefore prolong his operations as far forward into the prostatic urethra as he may elect.

The knife, it will be observed, is straight instead of having the conventional downward curve of many prostatic incisors. I believe that when used through the cystoscope a straight knife is preferable for the reason that the point can be kept constantly in view. It will of course cut through the floor of the prostatic urethra just as well as a curved knife could, for the urethra will tend to resume its natural curve as the cystoscope is withdrawn, and this will bring the prostate firmly up against the knife. Fairly deep incisions can also be made laterally by deflecting slightly the beak of the instrument.

It is believed that this technic has a somewhat wider field of usefulness than any of the various conservative methods of operating on the prostate hitherto proposed. It has the advantage over the Bottini operation that it can be done under the direct control of the eye. I believe that it is superior to Goldschmidt's procedure also, for the reason that portions of the gland can actually be removed and a more extensive operation performed, and it is much simpler in point of technic. It also would appear to promise somewhat more than the various punch operations, for the reason that the surgeon can incise or excise as he chooses and as deeply as he chooses, can

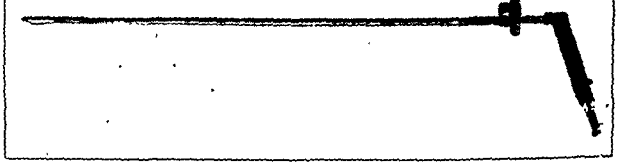


Fig. 2.—The cautery knife.

review his work almost indefinitely until he is entirely satisfied with the situation he has created, and is not annoyed by the hemorrhage. The only technical difficulty connected with the procedure lies in the proper heating of the cauteries under water, a thing which, however, is entirely feasible and has been done many times before. It will require some care in their manufacture and then considerable patience on the part of the surgeon to determine just how much current is necessary to heat them without the danger of fusing them. They must of course never be exposed to the current while in the air or they will fuse instantly. At best the surgeon must expect to burn out a knife occasionally and should therefore always take several of these cauteries with him to every operation. Finally, the pleasure to be derived from raking out an offending projection through the cystoscope under the direct control of the eye, together with the ease and simplicity with which this can be accomplished, will amply repay him for all his trouble.

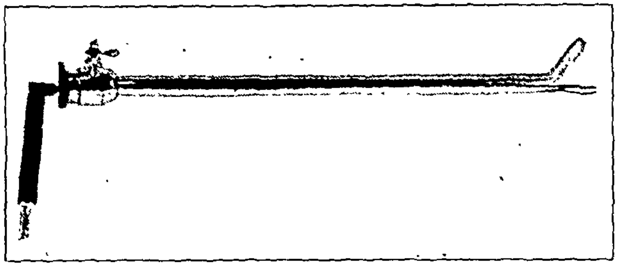


Fig. 3.—Braasch cystoscope with cautery knife in position.

600 Carleton Building.

SOME NEW CAMERAS FOR LABORATORY USE *

Louis B. Wilson, M.D., Rochester, Minn.

I have recently completed two cameras for laboratory use, and in describing them also include two others which have been in use for some time previously.

I. CAMERA FOR USE WITH PROCTOSCOPE

This camera (Fig. 1) consists of a cylindrical barrel (*A*) to the front end of which is attached a rapid, short-focus, photographic lens (*B*) and to the other end of which is attached a simple photographic shutter (*C*) and small metal receiver (*D*) for taking a plate-holder (*E*) which carries an ordinary photographic plate 4.5 by 6 cm. in diameter.

In use, when a desirable field is found through the direct-vision proctoscope (*F*), the camera is inserted with the shutter closed and set for time exposure and the dark slide of the plate-holder drawn. The patient's buttocks are steadied, the shutter snapped and an exposure of from 2 to 5 seconds given. The shutter is then closed and the camera withdrawn from the proctoscope. The operation should require not more than twenty seconds, and interferes but slightly with the ordinary course of a proctoscopic examination. The resulting pictures are circular and 1⅛ inch in diameter. The chief difficulty encountered is in maintaining the patient in a fixed position for the few seconds necessary to make an exposure.

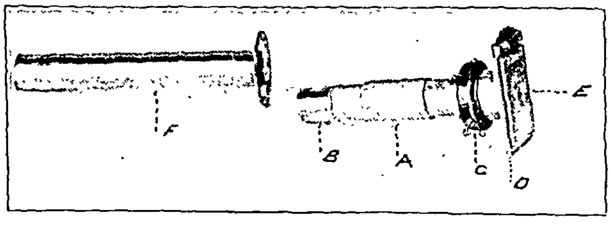


Fig. 1.—Camera for use with proctoscope; *A*, tube; *B*, lens; *C*, shutter; *D*, receiver; *E*, plate-holder; *F*, proctoscope.

II. MINIATURE CAMERA FOR PHOTOMICROGRAPHY

Laboratory workers have for a long time experienced great inconvenience in having to carry a microscopic slide from the microscope which they ordinarily use to one set up and adjusted for photography. A number of cameras have been devised to obviate this difficulty. With but two exceptions, these have all required the use of a large heavy plate on which the microscope rests at all times or to which it must be transferred after the desired field is found. Of the two exceptions, one is a camera which fits directly on the draw-tube of the microscope, weighs 685 gm. (23 ounces) and uses a plate of a size difficult to obtain in America. The other is a camera which has a very heavy base, and while the whole apparatus may be moved up to the microscope, yet has no means of rapidy centering the two. The miniature camera here described and the larger portable camera to be described next both get rid of the inconvenience of the heavy sole-plate, and yet work with simplicity, speed and accuracy.

The miniature camera (Fig. 2) consists of a pyramidal aluminum box (*A*) bearing at one end a shutter (*B*) with a light-tight connecting sleeve (*C*) and at the other end a receiver (*D*) which takes a plate-holder (*E*) carrying a plate of the ordinary block-note size, 4.5 by 6 cm. The whole apparatus is 9 inches long and weighs, complete as it goes on the microscope, only a trifle over 7 ounces. In use, when a desirable field has been found in the microscope, the camera is slipped on the microscope, to which it fits securely by means of a sleeve that remains permanently on the draw-tube. The camera is placed in position with the dark slide drawn and the shutter set for a time exposure and closed. The focus is then adjusted an amount previously determined by the fine adjustment screw, the shutter opened and the exposure made. The shutter is then closed and the camera removed from the microscope. The whole operation may be done without in the least jarring the microscope. Aside from the time of the exposure, which of course varies with the kind of light used and the magnification, the entire process requires less than a minute. This little camera gives excellent results, though its field of usefulness is, of course, limited by the small size of the plate and by the short range of magnification resulting from its short, fixed extension.

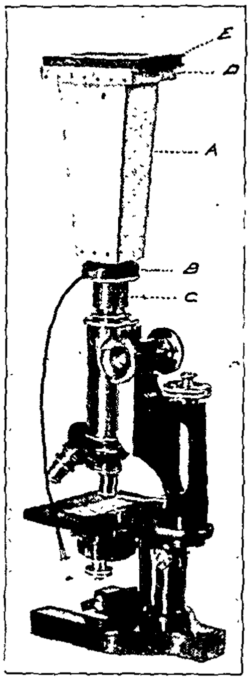


Fig. 2.—Miniature camera for photomicrography; *A*, box; *B*, shutter; *C*, light-tight sleeve; *D*, receiver; *E*, plate-holder.

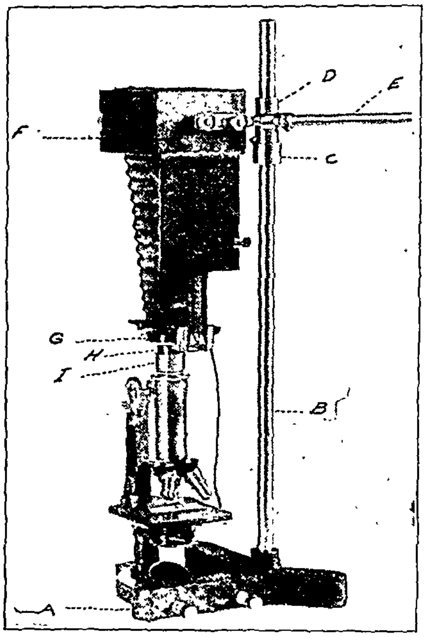


Fig. 3.—Portable stand and camera for photomicrography; *A*, base; *B*, support; *C*, collar; *D*, reducing clamp; *E*, arm; *F*, camera; *G*, shutter; *H*, and *I*, sleeve.

III. MEDIUM-SIZED PORTABLE STAND AND CAMERA FOR PHOTOMICROGRAPHY

This stand and camera (Fig. 3) have been devised to get rid of the inconvenience of the sole-plate or other special stand to which the microscope has hitherto been attached when used for photomicrography. The new features in it are: (1) a tripod base (*A*) which can be adjusted accurately by set-screws to any microscope with the ordinary horse-shoe base so that the instrument, while not attached in any manner to the microscope, can be brought instantly into accurate alignment with it; (2) a supporting rod (*B*) carrying a collar (*C*) and clamp (*D*), the latter of which is specially constructed for holding a round horizontal arm (*E*) in a manner that will permit its being turned at any angle and yet held with great firmness without turning; and (3) the camera (*F*) carried by the horizontal arm, by means of which it may be adjusted to any position from vertical to horizontal or tipped at any desired angle.

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* From the Mayo Clinic.

The camera itself takes the ordinary plate-holder for 3¼ by 4¼ plates, but is heavily reinforced in its working parts and has an unusually long bellows. A shutter (*G*) and light-tight sleeve (*H*) are attached to the front board. In use, the microscope to which the camera has been previously adjusted and to which is permanently affixed only a small inconspicuous part (*I*) of the light-tight sleeve may be used anywhere on a fairly level table. When a desirable field is found, the entire stand and camera are moved into position so that the studs and set-screws are in contact with the base of the microscope, when it will be found that the two instruments are in exact alignment. The readjustment of the focus may be made ordinarily with low powers by the fine adjustment screw, or, if necessary, with high powers, by refocusing on the ground glass. The subsequent steps of taking the photograph are those ordinarily employed.

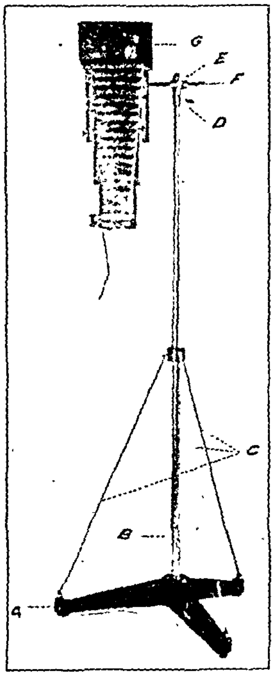

Fig. 4.—Large stand and camera for specimen and general laboratory photography; *A*, base; *B*, support rod; *C*, guy rods; *D*, collar; *E*, right-angle clamp; *F*, arm; *G*, camera.

The camera may be rotated on the support-rod at will and brought again into exact alignment by means of two stop-studs—one on the collar and one on the clamp—which engage with each other. It may be used with the microscope in the horizontal position or inclined at any angle, though the instantaneous alignment is obtained only when the instrument is in the vertical position.

Photographic lenses may be added to the shutter and the camera very conveniently used for photography of specimens and apparatus, or for making portraits, etc., while it is still attached to the stand. Or the camera may be detached entirely from the stand and then forms a high-class folding pocket camera suitable for plates or film-pack. For use with extra long-focus lenses, I have had this camera built with a 16-inch extension which is obtained by means of a supplementary bed.

IV. LARGE STAND AND CAMERA FOR PORTRAITS, GROSS SPECIMENS AND GENERAL LABORATORY WORK

Six years ago Andrews and I built and described (*Jour. Med. Research*, 1908, xvii, 487) a large stand and camera for photographing pathologic specimens submerged. This apparatus has proved to be thoroughly satisfactory in our hands, but there is a demand for a more portable and withal a less expensive machine to serve the same purpose. I have therefore devised the stand and camera shown in Figure 4. This apparatus which is well adapted for taking portraits of patients, photographs of gross specimens or operations and for general photographic laboratory work, consists of a heavy tripod base (*A*) into which is screwed a heavy support-rod (*B*) 5 feet high, which is reinforced and made more rigid by three small guy-rods (*C*) running from a collar near its middle point to the ends of the feet of the tripod. On the support-rod are carried a collar (*D*) and right-angle clamp (*E*) which is specially bored to hold securely at any angle a round arm (*F*) with a forked end to which is attached an ordinary long-extension 5 by 7 folding box camera (*G*). The camera may be used in the vertical position, as when photographing specimens under water, horizontally as for portrait work, or inclined at any angle as in taking photographs of operations, apparatus, etc. Hardened steel domes are inserted at the bearing points of the tripod in lieu of the usually unsteady casters. The whole apparatus is portable, light, simple in construction and extremely rigid, while its cost is very low.

A MEANS OF FACILITATING THE APPLICATION OF LEG-DRESSINGS

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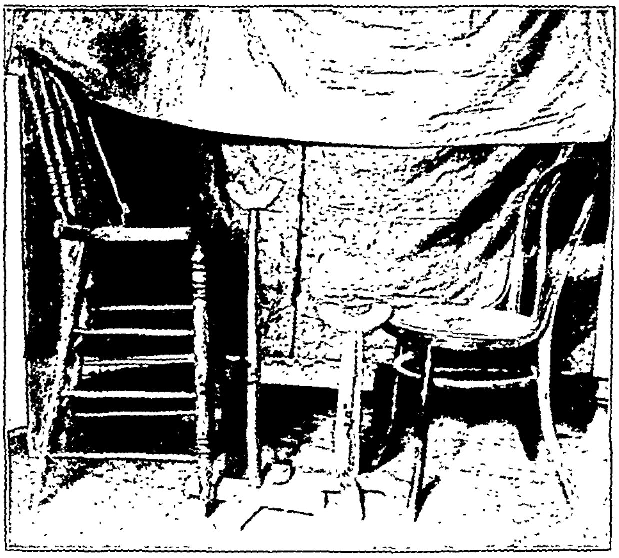
An uncomfortable or awkward position hinders efficient work in any occupation, including surgical manipulations. In the outpatient department of every large surgical service many leg cases are dressed. Such dressings are often avoided, partly because of the physical discomfort necessary in applying these dressings under ordinary conditions.

The heel-rest usually supplied for this work is slightly higher than the seat of an ordinary chair, and unless the dresser sits down to apply the bandage, he is compelled to bend over and assume a very tiring position, which is a matter of considerable moment where there are a number of these dressings.



The high chair and heel-rest compared with those ordinarily used.

In a busy clinic it is obviously impracticable for each dresser to have a seat for this purpose, and consequently a considerable amount of energy is unnecessarily expended. In order to avoid this useless fatigue and to accelerate the work, it occurred to me that higher chairs and correspondingly higher heel-rests might be of advantage. A number of these chairs with seats 28 inches above the floor, and heel-rests 32 inches high, were tried in one of the rooms of the outpatient department, and their use has greatly facilitated the application of leg-dressings.

Dressings on other parts of the body are also made easier by the use of these chairs, thus sparing the surgeon unnecessary discomfort. Should it be desirable to have the leg elevated before applying the dressing, the high heel-rest may be used while the patient sits on a chair of ordinary height.

These simple and inexpensive modifications in the equipment of a surgical dressing-room seemed worth while reporting, as I have found them most satisfactory.

Women in Medicine.—We are prone in the modern time to think that our generation is the first to offer to women any facilities or opportunities for education in medicine. We are prone, however, just in the same way, to consider that a number of things that we are doing are now being done for the first time. As a matter of fact, it is extremely difficult to find any important movement or occupation that is not merely a repetition of a previous interest of mankind.—Walsh: Makers of Medicine.

Therapeutics

THE TUBERCULOSIS PROBLEM

(*Continued from page 1017*)

TREATMENT

In the first place, it should be most seriously urged that, although there is no specific treatment for the cure of tuberculosis, and although the important part of the treatment consists in rest, fresh air and proper nourishment, it is a serious mistake to believe that a patient, even though for a period carefully advised, can do without constant medical supervision. This disease does not tend to recovery, but can be managed or engineered to recovery. The elements of successful treatment of pulmonary tuberculosis are hygiene (climate, sanatorium or home), fresh air, rest and food.

A few general axioms should be considered:

1. A change of climate alone, or any one climate, will not cure a patient. Therefore, there is no Mecca to which every patient, or even very many patients, should be sent on account of climate. Of course a dry climate, either warm or cold, is better than one which is moist or variable and changeable.

In seeking a location for the tuberculous patient, his comfort must not be forgotten. Even if other things are unequal, he must be comfortable and content, and where he can have the best possible food and will worry the least. Consequently, to combine the elements necessary for success, a large number of patients must be treated at home. A patient who is mentally weak, has no stability and lacks all mental force can be treated satisfactorily only at a sanatorium.

The tubercle bacillus seems to thrive best in cold, damp climates, and next best in hot, damp climates. It thrives less well, and bronchitis is less, in dry, hot climates, but it thrives least well, and bronchitis and catarrh of the upper air-passages are least prevalent, in dry, cold climates. It is generally understood that winds make a bad climate worse, and perhaps a good climate better. Therefore, for patients who are not seriously ill, a sea voyage, if possible, is often excellent. A climate changing rapidly from 20 to 40 or even 50 degrees in twenty-four hours, with fogs or with the damp atmosphere that occurs in places located on rivers, lakes, sounds or inner bays (that is, not actually subjected to the ocean breeze) is as bad as possible for tuberculous patients. In spite of these serious climatic disadvantages, however, many patients under proper treatment recover in these locations.

The value of a high altitude has been overestimated. One great advantage of altitude is that sanatoriums so located are ordinarily removed from the dust and dirt of cities; in other words, the air is pure, and they also have more sunlight and more clean, dry winds. Therefore, sanatoriums, even in the lowlands, placed at a sufficient distance from large cities and at such a height as to be entirely free from the atmospheric conditions surrounding such cities, and not to be subjected to the moist atmosphere of the surrounding plains, are able to offer most of the advantages of the more distant and perhaps ideally located sanatoriums. The height above sea-level is not so important for such sanatoriums as the height above the surrounding country; a location five hundred feet or more above its immediate environment is entirely satisfactory.

A patient at high altitudes, where the atmospheric pressure is reduced, breathes more rapidly for a period in order to oxygenate the blood normally, until he becomes used to the altitude. It has also been shown that he will acquire, for a time, more red blood-corpuscles until he becomes, so to speak, acclimated, and he then can perhaps walk without extra exertion or dyspnea, provided that the altitude is not too great and that he has no circulatory lesion and is not having hemorrhages. A patient with hemorrhages and a heart-lesion should not be sent to high altitudes.

There are so many authorities who may be consulted on climate and tuberculosis sanatoriums, that it is not proposed here to advise the place to which a tuberculous patient should be sent. It may simply be suggested that if a patient has the means to travel and is otherwise fitted for a distant sanatorium treatment, the Denver region represents the high and dry, and the Adirondacks a less high and colder climate; New Mexico and Arizona are dry, and often pleasanter; Southern California is pleasant, warm and more moist, and Florida has a warm, moist, rather undesirable climate. In the fall and spring, the Carolinas possess a pleasant, satisfactory climate, as also do many of the southern islands, as the Bermudas, at most seasons of the year. But it cannot be too many times repeated that a patient cured in the region in which he is to return to work stands that work better than if he is cured in another climate. He seems less likely to have recurrences. Also, the statistics of improvement seem to be very satisfactory for sanatoriums properly situated in most of our states, and not far from most of our large cities; hence it is not necessary to send a patient a great distance to be cured.

The value of the pine regions has also, perhaps, been overestimated. It seems to be a fact, however, that inhalation of the aromatic vapors from pine woods tends to cause the mucous membrane of the upper air-passages to be more healthy, and to dry up catarrhs of these passages. The satisfactory action of pine vapors has caused many inhalant mixtures containing them to be prepared.

A patient financially able may take the cure in the Adirondacks in the summer and in Southern California or South Carolina in the winter, and may thus avoid the hardship of a severe winter climate. To whatever sanatorium or region a patient is sent, careful decision should be made within two or three months as to whether or not this particular climate is causing improvement. Some patients do not do well in one climate, but immediately improve in another. As to climate and surroundings and the success of treatment, each patient must be individualized carefully.

The greatest handicap to the ultimate permanent success of sanatorium treatment is that it is difficult to make the patient and his relatives understand that although he looks well, eats well, has gained weight and coughs but little, he should remain longer at the sanatorium for treatment. Like the Christian Scientist, what he does not see, he does not worry about. It therefore means that each patient, and the patient's relatives, should put implicit trust in the decision of the patient's physician as to when he should begin to exercise, when he should stop active treatment, and when he should return to work. If the physician's advice were always followed in this respect, the relapses or the relighting of arrested pulmonary tuberculosis would be reduced at least half.

Other things being equal, as to whether or not a patient should be sent to a distance, we may make a rough working rule that a patient with incipient tuberculosis having but one apex involved, or a patient with a slowly healing pleurisy or a pneumonia that does not properly clear up, should be sent away. If both apices are affected, it is hardly justifiable to send the patient to any distance, especially at a pecuniary sacrifice. If much softening and cavities exist, or if there is disseminated tuberculous infiltration, a change of climate can often give but slight relief. Great care should be exercised not to send an advanced patient away, or on a journey that he cannot well stand. A patient without means, or without sufficient financial help to remain at a sanatorium for at least three months, should certainly not be sent to a distance.

2. The second essential is fresh air. The fresh-air treatment does not mean that the patient should be frozen to death in winter. It does not mean that he should be snowed on or rained on, or that he should lie out on a veranda in a fog. This is senseless, useless and often a cause of serious consequences, such as increased catarrh of the upper air-passages, hypertrophy of the mucous membrane of the nose, middle-ear catarrh, pneumonic congestions, congestion of the kidneys, and intestinal indigestion. Although many patients go through such hardships and attain recovery, a great many fall by the wayside. Such foolish exposure of young babies to cold as occurs to-day is a potent cause of the increase in postnasal adenoids.

3. The third essential is rest. When there are hemorrhages or continued fever, of course there is no question of the necessity of rest and quiet. When fever is not present in the morning, but rises in the afternoon and evening, it is certainly better to have the patient absolutely at rest. When the fever ceases, but the patient is not improving or gaining weight and has poor appetite, or when there is any bowel disturbance, the patient should still continue at rest. If the attending physician is in doubt as to whether or not a patient should exercise, it is best to err on the side of rest. Rest means more than simply lying down; the patient must be comfortable. Therefore the proper wraps for the season, the proper chair, couch or bed in such a location as to insure sun, air and the least possible wind, are all essentials for the rest-cure.

Just when exercise should be begun is hard to decide, and should be decided only by testing the patient. Exercise may be given, whether in walking, calisthenics or in the doing of a little work (and all must be graded) to see what the effect on the patient is; a bad effect is shown by an increased temperature, a rapid heart, loss of appetite, an increased cough and expectoration, or by a hemorrhage. Any of these occurrences would show that the rest period should be continued, except possibly when only an increased rapidity of the pulse results. A patient who shows no disadvantage from exercise, except an increased heart-action, should take graduated walks to strengthen the heart. In other words, a long-rested heart must be trained gradually to acquire sufficient strength to allow the patient to work.

The first exercise a patient should take is a sponge bath in the morning, first with tepid water, later with cool water, and finally often with cold water, to be followed by a brisk rubbing with a towel until the skin is aglow. The warmer the skin is and the better the circulation in the skin, the less likely is the patient to become chilled or take cold.

The next exercise should be ordinary walking, graduated according to the strength of the patient and the results obtained, to educate the patient to endurance. Next comes calisthenics or games that require more or less exertion, and finally some light labor. Driving or automobile riding may be advantageous, if facilities are offered and the patient is improved by such pleasures. Breathing exercises or lung gymnastics are doubtful propositions. The tuberculous lesion heals by contraction, not by expansion. Persons who have no active tuberculosis, who are insufficiently aerating their lungs, are becoming hollow-chested and breathing more or less abdominally only, should take deep breathing exercises; but a patient undergoing a cure for tuberculosis of the lungs should not. A patient receiving tuberculin treatment should also be at rest; that is, he should not take exercise on the days of the injections.

It is almost always of advantage to arrange a patient's daily routine if he is out of bed. He should have his meals and intermediate nutriment at regular intervals; he should have such rest times and such exercise times as prescribed, and he should retire at the hour ordered. It is also well to know absolutely what his exercise is, what his play consists of and how absolute is his rest. In no other way can it be determined where the mistake occurs in a non-successful treatment.

Some sanatoriums, notably one near San Francisco, are endeavoring to offer some simple, self-sustaining work so that patients may pay for their treatment at the same time that they take the cure. Such facilities allow an impecunious and partially healed patient to remain long enough at a sanatorium to perfect his cure.

4. The fourth essential element is food. As already intimated, an increase in weight does not always make the prognosis good, although fortunately it generally is a good indicator of the success of treatment. Some patients may even retain liquids and have slight edemas, from poor circulation, and their weight may increase from this cause. Also, a patient may gain weight from the rest, good food and fresh air, and yet the lung disintegration may continue. Patients who are nervously irritable and restless, especially children, may not gain weight, though eating well. This type is hard to manage in promoting the cure of tuberculosis.

Hyperalimentation, forcing of large quantities of food into the patient, is a mistake in the treatment of tuberculosis. The enormous number of eggs once recommended, the large quantities of milk and the consequent loading of the system with liquid, are also mistakes. The diet should be properly adjusted to the needs of the patient, to his ability to digest properly and assimilate the food offered, and should represent all the elements that good nutrition requires. This means that the patient should receive goodly amounts of carbohydrates, fat, sufficient but not too much protein, fruit, sugars, salts and water. The actual measurement of the amount of protein and the number of calories he receives is likely to be more irritating to the patient than of value in his treatment. A patient who eats sufficiently at his three regular meals need not have very much extra nutrition. A glass of milk, a cup of chocolate or an egg-nog, without alcohol, in the middle of the morning, in the middle of the afternoon, and at bedtime is generally good treatment. Whether or not the patient should drink milk with his meals depends on his digestion. It should be remembered that milk makes a meal by itself, and if a patient eats largely and drinks milk at his meals as he would water his digestive system will be overworked. Meat once a day is generally sufficient. The advantages, in the treatment of tuberculosis, of raw chopped beef or chopped-beef patties, very slightly broiled, or of expressed beef-juice and blood have been overlauded. Such treatment may be of advantage to some patients, but as a routine treatment is not good.

If for any reason a patient does not take meat, and does not have such a vegetable as greens frequently, and especially if he is anemic, he should receive iron once or twice a day, best in the form of the *Eisenzucker* (saccharated oxid of iron), in a 3-grain tablet. This iron should not be considered as a drug or as a medicament; it is simply part of the food. Goodly quantities of digestible cereals are positively essential to the welfare of the patient. The gummy cereals, such as oatmeal, should be taken well broken up as a soup or gruel, and should never be swallowed in gelatinous masses. The more granular cereals that are chewed to insalivate them properly are all more or less of value. The vegetables should be varied. Some fruit is essential, both for the laxative qualities and for the salts they contain. The value of uncooked egg-albumin has been overestimated; it is probably a very poor food, not well digested in the stomach, and often causes increased peristalsis and diarrhea. Raw eggs, including the yolk, or the yolks alone, form good food; but a raw egg is of no more advantage than one poached or soft boiled. The lecithin presented by the yolk of egg has all the advantages of any artificial preparation that contains lecithin; lecithin very probably is a slight nervous stimulant, and may be an aid in promoting nutrition.

Whether or not tea and coffee should be allowed must be determined for the individual patient. Generally he is better off without them. If he does not sleep well he should not receive them with the evening meal. Perhaps coffee with breakfast may be allowed. It should be remembered that tea and coffee represent the drug caffein, and a good strong cup of coffee contains between 2 and 3 grains of it. The action of caffein is that of a cerebral and nervous stimulant; it raises the blood-pressure and acts as a diuretic. If such activities are desired, coffee may be good treatment.

Once more, in our opinion, it should be stated that cereals, vegetables and fruit are of more advantage than large quantities of milk and many eggs. The patient should be encouraged to eat plenty of butter, and cream when he can obtain it, on cereals or other foods. If a patient cannot take, or for any reason cannot obtain plenty of cream, olive-oil in teaspoonful doses or on salads is advisable. Also, in some instances, it may be well to give the patient, after meals, cod-liver oil, best pure and in small doses. The advantage of cod-liver oil in tuberculosis has, of course, long been overestimated, but it is readily digested. If they do not cause indigestion, many of the oily nuts, such as peanuts, have their advantage as nutritives.

GENERAL CONSIDERATIONS

While infection from tubercle bacilli will cause an afternoon rise in temperature and many of the symptoms typical of tuberculosis, the high temperature in the afternoon and evening and the sweating at night are often really due to a streptococcus secondary infection, and such a temperature plotted on a chart is often termed "the streptococcic curve"; that is, typical hectic fever is really due to secondary infection. Therefore, the less the purulent bronchitis, and the general catarrh of the air-passages, the less will be the fever. Any treatment, therefore, whether inhalations or internal medication, which, when added to the proper treatment of the tuberculosis, will tend to diminish this bronchial catarrh, will also lower the temperature and cause less sweating and less loss of weight.

A patient should be cautioned against swallowing his sputum, as many an intestinal catarrh is due to such carelessness. That the tubercle bacillus can pass through the stomach and be absorbed from the intestine has already been stated. That streptococci and other pathogenic germs thus swallowed may cause diarrhea is also a fact.

If there is intestinal disturbance, it may be wise to give some drug as a bowel antiseptic.

Before eating a meal or taking nourishment, a patient not only should wash his hands and lips, but also should use some antiseptic mouth-wash such as a warm boric acid and menthol solution (as a 1 per cent. boric acid solution in ordinary peppermint water); or he may use a 1:5 dilution of alcohol in water.

It is often of advantage to give a high colon wash with physiologic saline solution perhaps once or twice a week. This can never do harm, and may do a great deal of good, whether the patient has a diarrhea or is constipated. An occasional dose of castor oil, or other laxative if preferred, is of advantage, even if the patient is not constipated, as it tends to clean out the intestines, and causes the mucous membrane if healthy to remain so.

Proper bathing is essential to keep the skin in good condition; whether this shall be only the morning sponging, or tub-baths, and whether or not with massage, should always be according to the orders of the physician. When the patient has a dry skin, inunctions of oil or cacao butter (oil of theobroma) are valuable, both for removing loosened epidermal scales and to stimulate the lower layers of the skin to a more healthful activity. The same manipulations will also promote the circulation in the skin and muscles.

An insufficient amount of urine passed means that the patient must drink more milk or more water, or perhaps receive some diuretic, such as caffein.

It should be a working rule that all narcotic drugs and depressants should be avoided, if possible. A patient should be taught to sleep without a hypnotic, unless it is deemed temporarily wise that he should be made to sleep artificially. Such treatment should be regretted, and should be only temporary. Occasionally a cough is so irritant and continuous that a sedative is needed, and codein is the best of the opiates. Such depressants as acetanilid or the bromids should be avoided, unless there is a specific indication for them. Nutrition will never improve while such drugs are being administered. Alcoholic stimulation is rarely required, and is generally harmful. Strychnin is generally inadvisable, as it rarely actually stimulates anything but the nervous system. It is an overused drug. Occasional doses of a camphor preparation, or of aromatic spirit of ammonia may be advisable, and are harmless.

Whether or not a male patient should smoke, if he has been addicted to the habit, is a question to be considered. If the patient is otherwise doing well, and he obtains considerable comfort by smoking once, or at most twice a day, after meals, it may perhaps be allowed. Occasionally a man who has been used to considerable amounts of tobacco daily, and becomes tuberculous, may have considerable circulatory weakness if tobacco is taken away from him. Such patients will have their circulation and blood-pressure improved if they are allowed a graded amount of smoking.

(To be continued)

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SATURDAY, APRIL 4, 1914

ATHLETIC SPORTS VERSUS COMPETITIVE ATHLETICS

Certain aspects of physical exercise need to be defended from the discredit into which they are likely to be thrown by the abuses of modern athletics.[1] So long as it is maintained that the latter necessarily involve the idea of a contest — and this point of view has its advocates — we are constrained to emphasize the fact that the dangers of athletic sports are primarily and almost entirely confined to their competitive aspects. It is not the exercise *per se,* but rather the undue exertion involved in the attempt to win or surpass that brings on the symptoms of overdoing, the defective functioning of heart and kidneys. We take no narrow or perverted view of the best intent of physical training. The fundamental definition of an athlete is one trained or fit to contend in exercises requiring great agility or strength. This does not call for a supreme effort.

If the element of competition could be eliminated from our athletic games, if the desire to win could be superseded by the joy of play and a pride in grace of movement and skill in performance, a great step in advance would have been taken. Precisely in these features do gymnastics surpass the athletic contests that call for the extreme efforts of most highly trained persons. The element of physiologic danger is almost entirely wanting in the usual routine of gymnastic exercises. They suffer by comparison with the other types of bodily exercise included in so-called athletic sports so far as the latter involve work outdoors and under conditions which represent the ideal of hygienic surroundings.

The American public is becoming converted to the need of bodily exercise for great groups of the population, young and old. Presumably this is, in general, a commendable sign. If the competitive feature could be eliminated and athletics were conducted for the sake of sport itself, the foremost dangers that now lurk in the struggle to win would vanish completely. It is doubtless too late to reform those who have been saturated with the current notions that athletics are synonymous with a fight for supremacy. In our schools, however, the element of contest involving a mere matching of strength ought to be fundamentally eradicated. The play of children represents the truest ideal of athletic sport. Graceful execution of movement and mild rivalry for perfection can be associated with forms of athletics of increasing difficulty in performance. To develop a graded sequence from the easiest games of early youth to the vigorous complex feats of middle life is a scheme well worth consideration on the part of those to whose care the physiology of exercise is entrusted. A successful plan of regulated physical exercise might serve to retain some of the personal zest for outdoor sports which is now too frequently lost in the misplaced enthusiasm for the dangerous athletic extravagances of a selected few.

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[1] See Athletic Sports in Relation to Health, editorial, The Journal A. M. A., March 21, 1914, p. 936.

CHEMICAL SUBSTANCES AND PHAGOCYTOSIS

There are three essential factors concerned in bacterial phagocytosis on which chemical substances may act so as to increase or depress phagocytic activity, namely (1) the leukocytes, (2) the opsonins, (3) the bacteria. The influence of various chemical substances on phagocytosis might be of great importance in bacterial diseases in which various drugs are now used without knowledge of their effect on the processes which produce immunity. A review of the action of chemical substances on phagocytosis with a study of the influence of some extensively used therapeutic agents has been made by Arkin.[1] From the results it appears that the action of chemical substances on phagocytosis varies with their chemical composition and their pharmacologic action. Substances which have an inhibitory effect on oxidation, such as chloroform, ether, morphin, potassium cyanid, alcohol, etc., all depress phagocytosis.

That the oxidative processes play a rôle in phagocytosis is evident because sodium iodoxybenzoate, an organic peroxid, which owes its pharmacologic and germicidal action to the presence of physiologically active oxygen, has a marked stimulating effect on the phagocytosis of streptococci and staphylococci *in vitro.*[2] The action appears to be on the opsonin of the serum. Furthermore, substances like colloidal metals which have a stimulating effect on oxidative processes stimulate phagocytosis to a marked degree. It may be that the beneficial effects of improved oxygenation of the blood in infectious diseases are due in part to the stimulating action on phagocytosis.

Substances like caffein and antipyrin, which are more inert drugs and have little if any effect on oxidation, likewise have little if any effect on phagocytosis. The salts are mostly injurious to phagocytosis to an extent depending on their toxicity, their ability to effect an exchange of ions with the salts in the cells, and to their ability to combine with the opsonins.

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[1] Arkin, A.: The Influence of Strychnin, Caffein, Chloral, Antipyrin, Cholesterol and Lactic Acid on Phagocytosis, Jour. Infect. Dis., 1913, xiii, 408.

[2] Arkin, A.: The Influence of Certain Oxidizing Agents (Sodium Iodosobenzoate and Sodium Iodoxybenzoate) on Phagocytosis, Jour. Infect. Dis., 1912, xi, 427.

Those substances which depress phagocytosis *in vitro* have been found, when studied *in vivo,* to have a detrimental effect on the immunity reactions, for example, the anesthetics, chloral, morphin, some salts and certain antiseptics. The substances which have been found to stimulate phagocytosis at all are: calcium, magnesium and mercuric chlorids; quinin; colloidal metals; peptone in dilute solution; nucleic acid; a few other leuko-stimulants, such as staphylolysin in weak solution; strychnin sulphate and nitrate; sodium iodoxybenzoate; salvarsan, and other arsenic compounds. It is interesting that all of these which have been studied *in vivo* have also seemed to have a favorable action there, namely, salvarsan, calcium chlorid, quinin, colloidal metals (platinum, silver, gold, copper) and mercuric chlorid in weak solution. Hence it appears that the action of a chemical substance on phagocytosis *in vitro* may be a good index of the effect of that substance when used *in vivo.*

Strychnin has a marked stimulating action on the phagocytosis of streptococci by human leukocytes in the presence of human serum. The action is on the opsonin of the serum apparently by the formation of a more active opsonin-strychnin combination. This action of strychnin seems to offer an explanation of its value in infectious diseases to which many clinicians have attested. It is another example of the empiric use of a drug whose therapeutic value has been placed on a scientific basis, and suggests a more extended use of this substance in infectious diseases. The interaction of the specific antibody and the chemical substance is in this case a beneficial one and suggests the possibility of a combined therapy against infectious diseases, the antibodies produced in the body being increased in amount by drugs introduced from without, or their action on the invading micro-organism accelerated.

Morphin has a depressing effect on phagocytosis, which is due largely to its action on the leukocytes. Large doses of this drug lower the resistance to infection; hence it should be used cautiously in bacterial diseases. Caffein has practically no effect on phagocytosis. Chloral has a distinct inhibitory effect on the phagocytosis of streptococci by human leukocytes. That this detrimental action is of importance in infection has already been demonstrated. Cholesterol reduces the opsonic power of normal serum, probably by combining with the opsonin. Antipyrin has no effect on phagocytosis, or on the formation of protective substances *in vivo.* Lactic acid, under certain conditions, suspends hemolysis and phagocytosis by acting on the complement and the opsonin, and neutralizes the anthracidal action of dog's defibrinated blood. The greater susceptibility to infection in muscular fatigue may be due to increased lactic acid formation.

Clearly the effects of an agent on the processes of immunity should be considered carefully when the use of that agent seems indicated in infectious diseases. The possibility of a combined therapy, consisting of the use of immune serums or vaccines together with certain drugs, suggests itself in the case of drugs which have a stimulating effect on phagocytosis. The drugs may act as stimulants to leukocytosis, increase the production of antibodies, or combine with the antibodies to render them more active. This opens up a new field for the use of chemotherapy, a chemo-immunotherapy.

THE MOTOR BEHAVIOR OF THE LOWER BOWEL

When Gaspard Bauhin discovered the ileocecal valve in 1579 he found that even after death it resists a moderate degree of pressure from the side of the colon, but very little from the side of the small intestine. For this reason the anatomic action, which prevents the fecal material from returning to the ileum after it has reached the cecum, has been believed to be a mechanical one. It is true that, as a rule, the contents of the large and small intestines do not mix; this fact of itself is not sufficient, however, to determine the function of the devices at the union of the ileum and the cecum. Both anatomic structure and physiologic experiments indicate that a strong ileocecal sphincter exists in man. This does not always prevent regurgitation into the ileum. The theory is rapidly gaining ground that the function of the ileocecal sphincter is, as Keith[1] some time ago suggested, to prevent the contents of the ileum from passing too rapidly into the cecum. Dr. Arthur F. Hertz[2] of Guy's Hospital in London has pointed out, as the result of extensive Roentgen-ray observations, that the bismuth-containing chyme reaches the end of the ileum an hour or even longer before any appreciable quantity passes into the cecum, and that often the ileum is still full, four, five or more hours after the last traces of bismuth have left the stomach. Consequently an accumulation of chyme occurs in the last few inches of the ileum, where it undergoes digestion actually for a longer period than it remained in the stomach. There may be active segmentation during the whole of this time; but very little peristalsis can be seen.

Such observations have led to the conclusion that the function of the ileocecal sphincter is to prevent the passage of the contents of the ileum into the cecum until sufficient time has elapsed for the complete digestion and absorption of foodstuffs. The chyme which reaches the cecum contains relatively small quantities of nutrient material in solution. Hertz remarks that ileac stasis is thus a normal physiologic condition of the utmost importance for adequate digestion. Normal ileac stasis is increased in certain conditions which lead to spasm or to inhibition of the normal relaxation of the ileocecal sphincter. This is notably true in forms of peritonitis associated with acute appendicitis.

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[1] Keith: London Hosp. Gaz., 1903.

[2] Hertz, Arthur F.: The Ileo-Cecal Sphincter, Jour. Physiol., 1913, xlvii, 54.

The ileocecal sphincter is said to begin to relax at infrequent intervals some time after the chyme first reaches it. If it be true that there is exceptionally active peristalsis in the end of the ileum and simultaneous relaxation of the ileocecal sphincter whenever food enters the stomach, obviously the proper filling of the cecum is dependent in no small measure on a gastro-ileac reflex. Observations by Hertz and his colleagues indicate that the cecum and ascending colon are entirely passive, and are filled solely as a result of the activity of the ileum. The passive filling of the colon is described as occurring very slowly except during and immediately after meals, this being the period at which peristalsis at the end of the ileum is most active as a result of the gastro-ileac reflex.[3]

From the immobility of the shadow of the colon observed in man after a bismuth meal, it has been assumed that the progress of the colonic contents depended on peristaltic waves too slow to be observed. From time to time, however, it has been reported that the contents of the cecum and ascending colon can move bodily into the transverse colon, while everything beyond the splenic flexure is carried through the pelvic colon and rectum and evacuated.[4] Evidence has accumulated in favor of the possibility that the contents of one section of the human colon may pass into a more distal section by a rapid movement lasting a few seconds. These large movements of the colon, so different from what one has hitherto been led to suspect, have now been seen on numerous occasions by competent observers. Hertz and Newton therefore conclude[3] that the movements of the colon seen in defecation and also, in normal persons, apart from defecation, are examples of the same phenomenon. Under natural conditions the passage of feces along the colon is mainly due, according to Holzknecht,[5] to a rapid movement along a considerable length of bowel, repeated three or four times a day. Hertz and Newton suggest that this movement is due, most probably, to a powerful peristaltic wave. The chief stimulus to it, as to the relaxation of the ileocecal sphincter, is the entry of food into the empty stomach—a gastrocolic reflex. Hertz and Newton add that in most persons this response results in defecation only after breakfast, as the pelvic colon is then full and the sudden passage of feces from it into the rectum gives rise to the call to defecation. After other meals the desire to defecate is not often felt, as, if the first attempt has been successful, the colon contains comparatively little feces, and under ordinary conditions of eating none are present beyond the splenic flexure until the latter part of the afternoon, or in the end of the pelvic colon until the evening. We are reminded that some persons with an abnormally excitable nervous system experience the desire to empty their bowels after each meal. This is due, on the hypothesis of the English clinicians, to an exceptionally active gastrocolic reflex, and the large movements through the colon are apparently so great that a quantity of feces actually reaches the rectum after each meal.

Little by little the nature of the movements of the entire human alimentary tract is becoming clearly appreciated, thanks especially to the suggestions derived from animal experiments and the fruitful Roentgen-ray method of examination first introduced by Cannon in this country. The old conception of slow and simple peristaltic movements as the sole motor device of the digestive canal has given way to that of a sequence of orderly, specialized neuromuscular mechanisms varying in different parts of the tract.

THE ANTECEDENTS OF GLYCOGEN IN THE LIVER

Glycogen has long occupied a conspicuous place among those chemical substances which take a prominent part in the energy transformations of the body. It is generally recognized that a well-nourished person is likely to abound in glycogen in those storehouses, namely, the liver and muscles, which this reserve nutriment commonly seeks out. When one attempts to define precisely what the precursors of the deposited glycogen may be, some confusion of views may arise. Broadly speaking, glycogen is regarded as representing a reserve material in the human body analogous to the reserve carbohydrate stored up in different parts of plants. It is a wide-spread belief that the liver does not manufacture glycogen from fats; and it is currently admitted that the so-called animal starch can be formed from the proteins of the food, or from the products of their alimentary disintegration, the amino-acids. But the principal source of glycogen, beyond peradventure, is to be found in the carbohydrates of our food.

Inasmuch as glycogen production involves a polymerization of glucose, it might at once be concluded that not all carbohydrates will give rise directly to it. To learn what sugars will lead readily to a storage of glycogen, for example, amounts to ascertaining an important item in respect to their assimilability. In Professor Hofmeister's laboratory at Strassburg, Barrenscheen[1] has taken a very direct method of solving some of the mooted questions in relation to the antecedents of glycogen, by employing directly the surviving isolated mammalian liver. In this way he has successfully perfused the organ with blood containing different sugars and noted the outcome so far as the deposition of hepatic glycogen is concerned. Glucose and levulose readily yield positive results. Neither galactose nor maltose is synthesized directly to glycogen. There are various substances such as lactic acid, glyceric aldehyd, glyceric acid, and glycolaldehyd, which retain some theoretic interest in connection with the metabolism of carbohydrates and do not yield glycogen; but they are found to act as precursors of sugar in perfused livers, in certain types of diabetic manifestation. It is a matter of surprise and more than passing import that the livers of animals rendered diabetic by the classic procedure of extirpation of the pancreas no longer are able to form glycogen from glucose, even when they are perfused with the blood of normal individuals of the same species. The glycogen-forming function cannot be restored by the addition of pancreatic extracts.

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[3] Compare Hertz, A. F., and Newton, A.: The Normal Movements of the Colon in Man, Jour. Physiol., 1913, xlvii, 57.

[4] Hertz and Schlesinger: Guy's Hosp. Rep., 1907, lxi, 423. Hertz: Arch. Roentg. Ray, June, 1908.

[5] Holzknecht: München. med. Wchnschr., 1909, lvi, 2401.

[1] Barrenscheen, H. K.: Ueber Glykogen- und Zuckerbildung in der isolierten Warmblüterleber, Biochem. Ztschr., 1913, lviii, 277.

So long as the possibility remains that one of the perversions characteristic of diabetes is the inability of the organism to retain ingested carbohydrates in the form of glycogen until they are needed, we are of necessity bound to learn what we can respecting its physiologic history at every stage of metabolism. The success with which isolated parts of the body have in recent years been compelled to tell their own story, as exemplified in a fragmentary way in the foregoing review, is one of the undervalued contributions to the physiology of the twentieth century.

MINERAL WATERS

An address by the secretary of the American Climatological Association, Dr. Guy Hinsdale,[1] before the balneologic section of the Royal Society of Medicine in London serves to remind us once more of the rather chaotic conditions which still exist in the United States in relation to the subject of mineral springs. It is still quite true, as Hinsdale remarks, that the definition of a mineral water varies with the point of view of the chemist, the geologist, the physician and the dealer. Each has his standard, and no arbitrary line depending on total content of minerals or salts in solution can be drawn between so-called pure waters and those commonly denominated as mineral waters. Indeed, some of the most popular and commercially valuable "mineral" waters in America have almost a minimum of solid constituents in solution.

The Third International Congress of Physiotherapy in 1910 passed resolutions recommending: a revision of analyses of mineral waters and the adoption of an international notation harmonious with modern chemical terms; the study of an international system of classification of mineral waters; the establishment in each country of a complete official descriptive catalogue of all springs and their commercial use; the creation of an international committee on the scientific study of mineral waters. All of these proposals represent steps in the right direction. Although in the past the analytic data pertaining to waters were furnished in such diverse ways that one reviewer discovered in use at least forty-two methods of stating the results, the recent analyses are now almost uniformly expressed in modern chemical nomenclature and decimal units. A rational classification of springs, however, is not always easy to make where they represent all gradations from one extreme group of alkaline waters like those of the Navajo Spring at Manitou, Colorado, or the Waukesha springs in Wisconsin, to the saline group at Saratoga or Mount Clemens in Michigan, the chalybeate waters of Missouri, the arsenic waters of Virginia, or finally the various springs from which effervescent waters of diverse types are derived. To all of this is added the still newer consideration of radio-activity.

The unprejudiced physician who is eager to avail himself of the best therapeutic aids that modern medical science affords cannot help being baffled by the conflicting claims made by the crude balneotherapy of to-day. He sees numerous cases in which relief has unquestionably been obtained by patients who have visited one of the many springs in this country or Europe; but when he attempts to analyze the possibilities—including rest, change of diet and environment—and to determine some standard by which he may intelligently advise those who need his help, the result is a hopeless confusion of ridiculous claims. The added question arises of the relative value of the different uses of the same waters. At some of the widely known spas —for example, Saratoga—the internal use of waters takes precedence; at Mount Clemens, White Sulphur Springs and others the baths are chiefly relied on; at Hot Springs and French Lick the combined method prevails. In view of the diversity of practice and the impossibility of measuring the consequences in any precise way, we agree with Hinsdale in scouting the claims of the specific virtues of particular mineral ingredients in the waters, except in such obvious features as laxative action or the absorption of dissolved iron salts.[2] If we assume, he writes, that approximately equal results are achieved by a course of bathing in waters so dissimilar, we cannot avoid the inference that the chemical constituents of these different springs are not *per se* the active therapeutic agents. That certain baths may be used with good results in a case of syphilis, and likewise in a case of gout, ought to suggest that the hydrotherapeutic or balneologic methods employed are more potent than the fact that the waters employed have a special chemical analysis. The differentiation of mineral springs for therapeutic purposes has some practical basis; but we believe it has been carried too far, especially in European practice.

If the cultivation of the rational use of mineral waters involves an accurate knowledge of their contents, information regarding them must have some guarantee of accuracy. For the past twenty years it has not been possible in France to advertise any mineral water as such, or to exploit a mineral-water station, without the favorable recommendation of a commission under whose direction the analyses are made. If such rules were in force in the United States, fake "lithia" waters would long ago have been driven out of the market.

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[1] Hinsdale, G.: Mineral Springs: Their Analyses, Classification, Therapeutic Uses and Newer Methods of Application; with Special Reference to American Springs, Proc. Roy. Soc. Med., 1914, viii, Balneological and Climatological Section, p. 13.

[2] The Absorption of Iron from Mineral Waters, editorial, THE JOURNAL A. M. A., March 14, 1914, p. 856.

The damage to mineral springs resulting from uncontrolled commercial ventures is illustrated by conditions at Saratoga. The amount of mineral matter held in solution by some of the waters there obtained is dependent on the quantity of carbon dioxid which impregnates the water and the pressure exerted at the mineral-water vein. For over twenty years an exhaustive pumping of the gas was carried on by a carbonic gas industry, and a great depletion of the mineral-water basin took place, depriving the entire area of materials which Nature had furnished for the maintenance of her natural fountains. Since New York State, through its Reservation Commission, has undertaken a protective policy with regard to the springs, and the pumping operations have been stopped, the restoration of the mineral waters to the Saratoga basin is being accomplished. Examinations by the State Hygienic Laboratory at Albany[3] show the return of a steady flow and fairly constant mineralization varying only with physical disturbances. A few years must elapse before the springs will have returned to all the natural conditions which were present before the gas companies began their operations. These facts serve to show that scientific control may sometimes be a beneficent procedure, and that, presumably through the Public Health Service, it ought to be applied more widely in the United States.

DEATHS FOLLOWING ANESTHESIA

Progressive medicine recognizes that among the most helpful aids to the advancement of the work of our profession are the critical analysis of errors, either in diagnosis or treatment, the frank discussion of mistakes, and the unremitting investigation of the reasons why procedures in current practice fail. For this reason we are interested in a recent review of inquests in England concerning deaths during anesthesia for the years 1910-1913, especially because it attracts attention to "the number of fatalities occurring with melancholy regularity" in different parts of the country. From the lay press accounts of coroner's inquests, Flemming[1] has secured "only such portion of the pabulum as has managed to squeeze through the newspaper filter." The statistics are therefore far from complete and the nature of the anesthetic used has been ascertained in only 542 of the 700 deaths reported in connection with anesthesia. In no fewer than 521 instances among these the anesthetic seems to have been more or less responsible for death. From such uncertain data it is not easy to determine the proper share of blame which should be attributed to surgery; but in 223 cases death is reported to have occurred before the operation was begun. Included in 100 instances where surgery was distinctly a contributing factor were many operations of great severity and of long duration. These accidents are in large measure unavoidable, inasmuch as various surgeons must naturally differ in their capacity for combining rapidity with gentleness.

The statistics regarding the nature of the anesthetics used in the fatal cases reported are instructive.

Chloroform	378
Ether	28
C. E., A. C. E. and A. C. mixtures	100
Nitrous oxid	12
Ethyl chlorid	6
Spinal	8
Scopolamin	2
Hedonal	2
Local	6
Not specified	158

In the majority of the cases the range in age was from 26 to 60 (338 persons) and from 6 to 15 (124 persons).

To American practitioners, less committed than their British colleagues to the general use of chloroform, the apparent dominance of fatalities from this anesthetic at once contrasts with the notably lower figures for deaths under ether. The data cannot be interpreted thus rigidly, however, unless the relative frequency of use of these anesthetics is likewise known. It may be that the percentage of fatalities is far greater with some other anesthetics than with chloroform. Flemming believes that a large number of these accidents would not have occurred if ether had been used during the induction of anesthesia, or at any rate during the struggling stage, and he champions the use of ether whenever possible. We have no desire to open the old controversy here; but these appalling data cannot be dismissed without awakening some inquiries. Are they attributable to the indiscreet selection of the anesthetic or to the limited experience of the anesthetist? Does the false sense of security point to some deficiency in the practical part of our teaching system?

We are well aware that from a strictly scientific point of view statistics such as Dr. Flemming has gathered by indirect methods are of limited value. It has even been maintained that the publication of such fatalities is a mistake; that the public is apt to conclude not that an experienced anesthetist is necessary, but that one who takes an anesthetic is likely to die. They do not realize that many of the accidents are preventable. Whether or not we take the review of Flemming seriously in its bearing on the practice of anesthesia, at any rate it serves to bring out the pressing need of reliable statistics and certain reforms in relation to deaths from anesthetics. If, as has been claimed, the coroner's inquest or the customary reports of death are poorly calculated to bring out the truth, some device ought to be introduced to establish the facts so that any needed reforms can be based thereon. Unpleasant details frequently arouse a storm of protest; but when the atmosphere has cleared the ultimate outcome is frequently of decided benefit to all concerned.

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[3] Milford, L. R.: Recent Analyses of the Saratoga Mineral Waters, IV, Jour. Industrial and Engineering Chem., 1914, vi, 207.

[1] Flemming, A. L.: A Review of Inquests Concerning Deaths During Anesthesia, 1910-1913, Proc. Roy. Soc. Med., 1914, vii, Section of Anesthetics, p. 17.

Current Comment

INAGGLUTINABLE TYPHOID BACILLI

Freshly isolated strains of the typhoid bacillus not infrequently resist agglutination by typhoid serum. Usually, however, they very soon become freely agglutinable, though occasionally a strain is encountered which resists agglutination through generation after generation. Such inagglutinable typhoid strains have otherwise all the usual characteristics of the typhoid bacillus. This inagglutinability is of considerable interest: unless guarded against, mistakes may result from the use of inagglutinable strains in making agglutination tests; and then there is the question why certain strains should be inagglutinable. McIntosh and McQueen[1] isolated a strain of this kind from a case of typhoid fever and made experiments with it, the results of which throw light on this question. They found, and others have made similar observations, that the inagglutinable strain, when injected into animals, led to the production of typhoid agglutinins which had practically no action on itself, but agglutinated heterologous typhoid strains freely; and furthermore, that the strain in question would absorb typhoid agglutinins just like the agglutinable strains. Hence the inagglutinability cannot be due to loss of affinity for the agglutinins; that is, loss of receptors in the terms of the side-chain hypothesis, but rather to some physical alteration by virtue of which the second step in agglutination fails to take place, namely, aggregation or clumping. It would be interesting to learn how inagglutinable strains behave with respect to opsonification. They appear to have no peculiarities with respect to complement fixation, and are clumped by chemical agglutinants, an observation showing that acid and serum agglutination do not depend on the same factors.

THE OFFICE OF CORONER

About a year ago we commented[2] on the inadequacy of the machinery in this country for proper conduct of the coroner's office, and stated that thorough rehabilitation along modern lines was urgently needed. It was also stated that so long as the coroner remains an elective officer with a continuous tenure of at most four years, it is not likely that the office will be filled generally with properly trained men. A bill is now pending in the New York legislature to do away with the ancient coroner system and to substitute for it a system of medical examiners. The bill provides for a new officer to be known as the chief medical examiner, who must be a skilled pathologist with at least ten years' practical experience in the performing of necropsies, to be appointed by the mayor, and to hold office until he resigns or is removed for cause after a hearing. He will appoint assistant examiners, chemists, clerks, etc., as may be deemed necessary, subject to approval by the board of estimate and apportionment. The power of the present coroner is limited so that this officer will hold inquests only in cases referred to him by the district attorney, acting as a magistrate. The new law also marks the abolishment of the coroner's jury, a body which is costly, useless and often ridiculous — which might be said, however, of the petit jury. The medical investigation of crime is to be the duty of qualified medical officers, capable and responsible. The bill is the result of a joint conference of committees of the New York Academy of Medicine, trustees of Bellevue and allied hospitals, district attorney's office, professors of pathology in the leading medical schools, City Club, Citizen's Union and Short Ballot Association. Its passage would result in the removal of a pernicious, slow, inefficient system, which is a relic of obsolete social conditions.

HEALTH ALMANACS

Three years ago, at the time that the Virginia State Board of Health issued its first "Health Almanac," The Journal commented on the innovation,[1] commending the board for rescuing from the hands of "patent medicine" fakers this time-honored institution. New editions of Virginia "Health Almanacs" have been issued every year since. Several other states have followed the same plan. The almanacs for Virginia and North Carolina for 1914 are particularly attractive. In the Virginia calendar the familiar monthly tables, giving the days of the week and the month, the time of rising and setting of the sun and moon, and the moon's changes, contain important dates in which, so far as possible, items of scientific interest have been substituted for the hackneyed entries in the old-time almanac. For instance, under January 26, is the entry, "Edward Jenner born, 1823"; February 12, "Charles Darwin born, 1809"; February 13, "John Hunter born, 1728"; March 13, "Joseph Priestly born, 1733"; March 18, "Lady Montague's son inoculated for small-pox"; May 14, "Vaccination first tried, 1796"; June 27, "Dr. Carroll submitted to yellow-fever experiment," etc. Opposite each monthly table is a page of short paragraphs on some specific disease-problem. January, for instance, is devoted to small-pox; February to pneumonia; March to typhoid fever; April to malaria; May to infantile mortality; June to flies; July to typhoid; August to hookworm; September to diphtheria; October to scarlet fever, measles and whooping-cough; November to colds, and December to tuberculosis. Additional pages contain directions for the care and feeding of infants, information regarding typhoid vaccine and typhus antitoxin, and birth and death registration. The North Carolina State Board of Health Almanac follows the same general plan, but contains interspersed proverbs, admonitions and suggestions. Some of these "healthgrams" are deserving of mention. "Ventilate—don't hibernate." "An open window is better than an open grave." "Sunshine is God's best germ-destroyer." "Most colds are catching." "Fresh air, rest and good food are the only cures for consumption." "The only bad night-air is last night's air." "'Cures' for consumption guarantee only one thing—death." "A city's most valuable asset is wholesome water." "A good iron pump costs less than a case of typhoid." "God bless the man who first invented screens!" "The only good fly is a dead fly." "Preventable diseases are born of ignorance." "Don't take medicine for sleeplessness—take a bath." The alternating pages are filled with short forceful paragraphs on a multitude of different subjects. The value of the almanac as an educational agent is evident. Frequently referred to in every household and preserved throughout the year, the educational matter in it has a much better opportunity to sink into the minds of the people than it would have if contained in a regular bulletin or a health pamphlet. The health almanac offers an admirable opportunity to state boards of health to preach their gospel every day.

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[1] McIntosh and McQueen: Jour. Hyg., 1914, xiii, 409.

[2] The Office of Coroner, editorial, The Journal A. M. A., May 24, 1913, p. 1644.

[1] The Reformed Almanac as a Health Evangelist, editorial, The Journal A. M. A., April 15, 1911, p. 1115.

THE SURGEON-GENERAL'S LIBRARY IN DANGER

Seldom have the dangers of hasty and routine legislation been better illustrated than by the amazing amendment to the Army appropriation bill, which passed the Senate, Saturday, March 28. The bill contained as one of the appropriation items the clause, "For the Library of the Surgeon-General's Office, including the purchase of necessary books of reference and periodicals, $10,000." The Library of the Surgeon-General's Office has been for many years the pride of the medical profession of the United States, comprising as it does the largest collection of medical and surgical books in existence. It is an inexhaustible mine of scientific information. It is, in fact, the nation's medical library. Its Index-Catalogue is recognized the world over as the best working bibliography of modern medicine, by which scientific men are enabled to find all the existing authorities with the least trouble. Owing to the broad and liberal policy of its administration, for years past the material in the library has been made available to the entire medical profession. Its development has been a growth of many years, and the need of the preservation of its integrity and usefulness will be apparent to any one on the slightest investigation. Yet in spite of all this, without any discussion or careful consideration, without even consulting the Surgeon-General of the Army or the head of the Library of Congress, without apparently arousing a word of protest in the Senate, the following amendment was adopted by that body last Saturday: "Provided that on or before Jan. 1, 1915, said library shall be transferred to and become a part of the Library of Congress, and so much of the amount herein appropriated as may be necessary is made available for paying the expenses of such removal." This hastily considered and unwise effort to pitchfork the Surgeon-General's library into the Library of Congress is entirely without justification or reason; it can only result in obliterating the identity of the Surgeon-General's library and destroying its usefulness. The Library of Congress has no room for the Surgeon-General's library at present and the librarian of Congress does not want it. To move the Surgeon-General's library into the Library of Congress building would simply involve double expense without compensatory advantage, since in order to be of any real use and to fulfil the functions which it has developed, the Surgeon-General's library must maintain its autonomy. To be of service it must be managed in the future as in the past by carefully selected scientific medical men. Its record is such as to entitle it to the confidence of Congress. The Army medical officers who have been in charge of it in the past, such men as Billings, Huntington, Merrill, Reed, McCaw and McCullough, have conducted and developed it to the entire satisfaction of those familiar with its work, and with ever-increasing value to the medical profession and the public. To move it would be an expensive and tactical blunder, and to destroy or even impair its usefulness would be justly regarded by the scientific men of the world as an act of unjustifiable and wanton vandalism. The fact that this amazing proposition could pass the Senate without challenge is only another instance of the dangers of permitting "riders" in the form of irrelevant amendments to be saddled on appropriation bills. The Army appropriation bill passed the House without this absurd provision. Under the parliamentary rules which govern Congress, the measure will now be returned to the House for concurrence. It is earnestly hoped that there will be enough discrimination in the House of Representatives to eliminate this uncalled-for and destructive provision.

Medical News

ALABAMA

Personal.—Dr. B. W. Guyton has been accepted by the board of missions of the Methodist Episcopal Church, South, as a candidate for hospital work in China.——Dr. James-Smith, Huntsville, who has been on duty as surgeon of the United Fruit Company, Colon, is home on sick leave.——Drs. Edwin P. Solomon and William H. Wilder, Birmingham, have been appointed division surgeons of the Southern Railway, vice Dr. Benjamin G. Copeland, deceased.——Dr. Robert Nelson, health officer of Birmingham, has resigned. Dr. Nelson was the guest of honor at a farewell banquet given by the members of the Health Department, March 16. —The residence of Dr. Wyatt Heflin, Birmingham, was burned recently, with a loss of $15,000.

CALIFORNIA

Against Contract Practice.—The Sonoma County Medical Society, at its meeting March 12, passed a resolution that no physician should sign a contract with any insurance company to attend persons injured under the workingmen's compensation act.

Stanford Medical Lectures.—The last two lectures of the Stanford University medical course were delivered by Medical Inspector S.-F. Gale on "Medical Service in our Navy," March 13, and by Dr. Andrew W. Hoisholt, superintendent of the Napa State Hospital, March 27, on "The History and Nature of Insanity."

Civil Service Examinations.—The State Civil Service Commission announces that examinations will be held May 7, 8 and 9, to provide a register of eligibles from which to fill the positions of physicians in city hospitals. The examination is open to both men and women, citizens of California, and twenty-one years of age. Complete information and application blanks may be obtained from the office of the State Civil Service Commission, Sacramento.

Personal.—Dr. Stanley P. Black, Los Angeles, has resigned as a member of the State Board of Health in charge of the Southern Branch Laboratory since 1907.——Dr. Walter V. Brem has been appointed division bacteriologist, with offices in Los Angeles, to succeed Dr. Black.——Miss Grace A. MacMillan has been appointed laboratory assistant in the State Hygienic Laboratory at Berkeley. She will assist the director in the serologic work of the laboratory. Miss MacMillan was formerly an assistant in the United States Public Health Service laboratory in San Francisco.——Dr. Thomas D. Maher, San Francisco, has been appointed chief physician of the public schools, vice Dr. Emmet L. Wemple.

State Board Bulletin for February.—The *Bulletin* of the State Board of Health for February is exceptionally interesting. It represents the work of the new secretary of the board, Dr. Donald H. Currie, and his assistants. The secretary announces his intention of following the plan of his predecessor, Dr. Corydon G. Snow, in presenting each month, under the heading "Comments," at least one article of general interest to the readers of the *Bulletin*. In the February number a brief résumé is given of the situation in the state with reference to plague, small-pox, leprosy, yellow fever, Asiatic cholera, typhoid fever, rabies, hookworm and diphtheria. All of these diseases were present in the state during the month except plague, yellow fever and cholera. It is stated that the United States Public Health Service, on the completion of its squirrel extermination campaign this spring, expects to have the most heavily infested counties of the state freed from plague-infested ground-squirrels. The campaign will then be continued in the other counties. Yellow fever is mentioned on account of the possibility of its being brought into the state from the infected parts of Mexico, and Central and South America. The yellow fever mosquito at present is not found in California, but it is believed that it might possibly be carried into the interior of the state where conditions are favorable to its propagation. It might come either through the ports, or by way of railroad trains from Texas which is only two or three days away. Cholera is also mentioned on account of the remote possibility of its being brought in by visitors from Asiatic ports.

CONNECTICUT

Scarlet Fever at Yale.—Since the first of the year eleven cases of scarlet fever have occurred among the students at Yale. The last case to occur was reported March 23.

Clean-Up Week.—The week of April 5-11 has been set aside as clean-up week in New Haven. The school children have been enlisted, as in previous years, for the discovery of insanitary yards and buildings. Dr. Harry B. Ferris is chairman of the general sanitation committee and Dr. Thomas H. Russell, Jr., chairman of the committee on flies.

FLORIDA

New Officers.—Volusia County Medical Society at De Land: president, Dr. Edward F. McConnell, De Land; secretary, Dr. Davis Foster, Hawk's Park.

Experiment Building for State Board.—A building is being erected at a cost of $2,200, on the grounds near the State Health Office, Jacksonville, by the State Board of Health, to be used for conducting experiments and making tests on animals suspected to have communicable or contagious diseases.

GEORGIA

Want Zones of Quiet.—A petition has been signed by more than two hundred physicians of Atlanta requesting that legislative measures be enacted to establish "zones of quiet" near hospitals of the city.

Personal.—Dr. Bartow S. W. Daniels has resigned as city physician of Savannah.——A dinner was given in honor of Dr. Guy D. Ayer, Atlanta, by physicians of Atlanta, March 21.——Dr. James P. Smith, Augusta, is reported to be critically ill at the Augusta City Hospital.

New Officers.—Ocmulgee Medical Society at Hawkinsville, March 20: president, Dr. A. A. Smith; secretary, Dr. Robert G. Stone, both of Hawkinsville.——Seventh District Medical Society at Rome, March 12-13: president, Dr. William G. England, Cedartown; secretary, Dr. William L. Funkhouser, Rome.

Medical Hall Ready.—The Georgia Medical Society, Savannah, occupied its new building on Drayton Street, March 13. The building is known as the Medical Hall of the Georgia Medical Society, will be used as a meeting-place for the organization and also for social gatherings, and will also provide an appropriate home for the valuable library of the organization.

Examination for Chief Food Inspector.—The city of Savannah has an ordinance providing for the establishment of a department of food inspection, the regulation, slaughtering, handling, care and sale of meat, poultry, game, fish and oysters, and has adopted the unique procedure of making the appointment subject to technical and practical examination of the candidates, who may be from any portion of the United States. The examination for this position is advertised in various medical and veterinary journals throughout the country. An examination will be held simultaneously in Boston under the direction of Dr. M. J. Rosenau of Harvard Medical School; in Washington under the direction of an officer of the United States Public Health Service; in Chicago under the direction of Health Commissioner George B. Young, and in Savannah under the direction of City Health Officer, Dr. William F. Brunner, assisted by Drs. John W. Daniel and W. C. Burnett, and Victor H. Bassett, city bacteriologist.

ILLINOIS

Dispensary for Evanston.—A free medical and dental dispensary is to be opened at the north end of Maple Street, Evanston, about May 1. Special attention is to be given to school children.

Anti-Tuberculosis League Meeting.—The Woodford County Anti-Tuberculosis League has decided to hold four general meetings during the year, and twelve local meetings. The league is to issue a quarterly bulletin, to be edited by Dr Homer A. Millard, Minonk.

Personal.—Dr. Olive Hughes Kocher of the staff of the Elgin State Hospital has been transferred to the Watertown State Hospital.——Dr. Esther A. Hart Stone of the staff of the Watertown State Hospital has been transferred as physician to the State Home for Girls, Geneva.

Chicago

Personal.—Dr. Frank Billings has returned from a trip to the Mediterranean.

State Isolation Hospital Started.—Mayor Harrison, on March 27, turned the first shovelful of earth of the ground for the new contagious disease hospital at Marshall Boulevard and Thirty-First Street. The hospital, when completed will accommodate 600 patients.

Surgeon Wins Suit.—In the case of Dr. Coleman G. Buford against the estate of A L. Sercomb for $5,000 for an operation performed on Mrs. Sercomb, the probate court returned a verdict of $5,050 in favor of Dr. Buford, that is, the original claim and $50 for consultation and examination of Mr. Sercomb.

Milk Producer Has Small-Pox.—On March 16, the Department of Health collected samples of milk for sediment testing. For a farmer near Bass, Ind., the test was so unfavorable that notice was sent him to appear before the Board of Health. Eleven days later a letter was received from the man, saying that he could not come to the city, since he had been ill with small-pox since March 9, and had not yet recovered. During this time, milk had been coming in from the farm daily.

The Contagious Disease Hospital Question.—Under this heading the *Official Bulletin of the Chicago Medical Society* advises, for the best interests of the community, that any contagious disease hospital built by the community should be provided with accommodations for pay as well as free patients. It agrees that if the health commissioner will guarantee to obtain the necessary frontage consent for the location of such a hospital, in a part of Chicago reasonably accessible, the society will build the hospital, provided it be under community control.

INDIANA

New Officers.—Whitley County Medical Society at Columbia City, March 10: president, Dr. Oliver V. Schuman; secretary-treasurer, Dr. David S. Linvill, both of Columbia City.

Sanatorium Notes.—Work on the new St. Joseph's County Tuberculosis Hospital will begin about April 1; $12,000 has been appropriated for this purpose.——Floyd County Hospital Association has filed articles of incorporation and will establish an open-air camp for tuberculosis on the knobs, northwest of New Albany. A site has been secured on the Vincennes Road, and a dozen or more cottages or open-air shacks have been donated by societies and fraternal orders of New Albany.——Bert H. Whiteley has given a hospital to the city of Muncie.

MARYLAND

Asks for More Vaccinators.—Health Commissioner Nathan R. Gorter appeared before the Board of Health of Baltimore, March 10, and asked for more than fifty additional physicians as vaccinators. Since Christmas eve, 177 cases of small-pox have been discovered, and the present force is unable to cope with the situation.

Personal.—Dr. Gerard H. Lebret, former chief resident physician at St. Luke's Hospital, Baltimore, has been appointed radiologist at the New Jersey State Hospital, Trenton.——Dr. Samuel C. Chew, Baltimore, who has been ill at his home at Roland Park, is convalescing.——Dr. Marshall D. West, Catonsville, has recently established a small-pox hospital at Ilchester, where there are four patients, and one at Hillsdale, with nine patients.

To Prevent Small-Pox.—In an effort to prevent the spread of small-pox which has been causing consternation among the residents of Curtis Bay and the surrounding districts, a movement has been started by Dr. William D. Scott, which has received the commendation of not only the residents of South Baltimore, but also of the heads of corporations that employ large numbers of men in that section. Dr. Scott suggested the advisability of starting a campaign to vaccinate every man employed by the large corporations in that section and immediately began work by vaccinating fifty-two men in the Davidson Chemical Company in one day.

Campaign for Contagious Disease Hospital.—The Baltimore City Medical Society and the Medical and Chirurgical Faculty of Maryland have taken up the fight for a hospital for infectious diseases in Baltimore and intend to see that a hospital containing 300 beds is provided for such cases. Baltimore has only 37 beds at Sydenham, as compared to 430 beds in Philadelphia, 215 in Cincinnati and 125 in Rochester. A bill was introduced into the general assembly last week authorizing a bond issue of $750,000. The physicians will go before the senate some time this week. They will also go before the city council and will hold public mass meetings. The body having immediate charge of the campaign is a committee of the Baltimore City Medical Society, but both this society and the medical faculty are behind the movement. Members of the committee are: Drs. Archibald C. Harrison, Chairman; Winford H. Smith, superintendent of the Johns Hopkins Hospital, Louis P. Hamburger, Charles O'Donovan and Thomas R. Brown, president of the Baltimore City Medical Society.

MICHIGAN

New Officers.—Saginaw County Medical Society at Saginaw, March 19: president, Dr. Robert McGregor; secretary-treasurer, Dr. Alexander R. McKinney, both of Saginaw.

Appropriation for Hospital.—The Detroit City Council's committee of health and city hospitals, on March 23, made an appropriation of $812,000 for additional land and buildings for the Herman Kiefer Contagious Disease Hospital, and also approved the appropriation of $400,000 for a Tuberculosis Building and $100.000 for a unit for the proposed General Hospital, and the Board of Health Estimate of $60,000 for the care of tuberculosis patients.

Septic Sore Throat at Ann Arbor.—Up to March 24 about one hundred cases of sore throat had occurred among the students at the University of Michigan. The disease in some cases is severe. While the dean, it is reported, claims that the disease is only an ordinary sore throat, others claim that the disease is of the septic variety. An investigation has resulted in the exclusion of the water-supply as the source of the disease, and the milk-supply of the students afflicted is being investigated.

No Compensation for Militia Surgeon.—Dr. Floyd A. Roberts, Flint, an officer in the Medical Corps, N.G., Mich., during the recent labor troubles in Calumet, received injuries, while on duty, that resulted in blood-poisoning and partial disability. He made application to the state for compensation, but was informed by the attorney general that such cases did not come under the workingmen's compensation law, and that, furthermore, the fact that he was not permanently injured would militate against his receiving any compensation.

Personal.—Dr. George B. Gesner, health officer of Marshall, is seriously ill with septicemia.——Dr. Harvey J. Chadwick, Grand Rapids, who is ill with pneumonia, is reported to be improving.——Dr. Charles H. Oakman has been elected president of the Detroit Board of Health, vice Dr. Johnson B. Kennedy, term expired.——Dr. and Mrs. Ralph O. Fuerbringer, Saginaw, have returned from abroad.——Dr. Roscoe C. Main has been appointed full-time health officer of Marquette.——Dr. Sherman Gregg, St. Joseph, has been appointed assistant physician of the Kalamazoo State Hospital, vice Dr. Edmund M. Pease, resigned.——Dr. Levi A. Harris has been appointed postmaster of Gaylord.

MINNESOTA

Personal.—Dr. Pierre A. Hilbert, Melrose, has returned from a trip to the Panama Canal Zone.——Dr. Conrad A. Neumann, Lewiston, was operated on at Rochester, March 22, for septicemia.

New Public Health Association.—At the first meeting of the Minnesota Public Health Association, March 13, the organization was perfected and the following officers elected: president, E. W. Randall, St. Paul; vice-president, Dr. W. J. Marcley, Minneapolis; honorary vice-presidents, Gov. Adolph Eberhardt, and Pres. George F. Vincent of the University of Minnesota; and secretary-treasurer, H. Longstreet Taylor, St. Paul.

Infectious Diseases in Twin Cities.—On March 22 it was reported that since January 1 there had occurred 628 new cases of scarlet fever and 782 cases of diphtheria in Minneapolis. Both diseases were reported to be unusually virulent, attacking an unusual proportion of adults. Up to the date mentioned there had been 401 more cases of diphtheria than in any previous year between January 1 and April 1. The deaths from diphtheria were 49 and from scarlet fever 31. Violations of quarantine regulations have been wholesale, it is reported. In St. Paul since January 1 there had been 688 cases of scarlet fever with 14 deaths, and 106 cases of diphtheria with 5 deaths.

Mayo Clinic Opened.—The new Mayo Clinic Building, Rochester, was formally opened, March 6, with a reception in which about sixteen hundred people participated. The building is of brick and masonry construction, four stories in height. The building is provided with rooms for Drs. William J. and Charles H. Mayo, Christopher Graham and Edward S. Judd. The business offices and general clinical rooms are on the first floor; the second floor is for diseases of the eye, ear, nose and throat, bacteriologic laboratories a[illegible] department; the third floor contains [illegible] rooms and staff rooms, and the fourth floor has an immense store room for the disposal of specimens and also the photographic equipment of the clinic.

MISSISSIPPI

State Association Meeting.—The forty-seventh annual meeting of the Mississippi State Medical Association will be held in Columbus, April 14 to 16.

Personal.—The residence of Dr. Robert A. Anderson, Gulfport, was burned March 25, with a loss of $15,000.——Dr. Morris J. Alexander, Tunica, has resigned as president of the Mississippi State Board of Health.——Dr. S. Wade Glass, Lyon, has been appointed a member of the State Board of Health.

MISSOURI

Personal.—The office of Dr. William P. Rowland, Bevier, was burned March 24.——Dr. William A. Clark, Jefferson City, was seriously injured in a collision between his automobile and another motorcar, March 14.

Class Reunion.—Seventeen of the thirty-three members of the class of 1894 of the old Kansas City Medical College, met in Kansas City, March 23, and effected a permanent class organization, electing Dr. Andrew M. Kirkpatrick, La Harpe, Kan., president, and Dr. Thomas Fields, Kansas City, secretary.

St. Louis

Mount St. Rose Fund.—The campaign to raise $300,000 for the Mount St. Rose Hospital has resulted thus far in contributions amounting to nearly $40,000.

John Green Memorial.—A memorial for the late Dr. John Green was held, April 2, in the Graham Memorial Chapel, Washington University. Among the speakers were Dr. Washington E. Fischel, Prof. E. A. Engler, Dr. Arthur E. Ewing and William Trelease.

MONTANA

Northern Health Officers to Meet.—The Northern Montana Health Officers Association was organized at Havre, March 23. The object of the association is to secure better cooperation among county and city health officers, to discuss problems of public health and to improve living conditions throughout the state.

Resolutions on Vivisection.—At its regular meeting, March 14, the Gallatin County Medical Society adopted resolutions deprecating the attempts of the periodical *"Life"* to hinder and prevent research by false and overdrawn illustrations, and endorsed the work of *"Puck,"* which is endeavoring to counteract these attempts.

NEW YORK

Health Bulletin.—The first issue of the *Monthly Bulletin of the Syracuse Bureau of Health* will appear late in April. The first issue will be practically given over to infant welfare matters.

Start on Tuberculosis Hospital.—Excavation has been commenced for the foundations of the Onondaga County Tuberculosis Hospital, Hopper's Glen. The contract calls for the completion of the building by October 4.

Increase Salary of Indian Physicians.—The Arndt bill, which increases the salary of the physicians to the Onondaga and St. Regis Indians, passed the assembly, March 20. This bill advances the pay of the physicians from $300 to $900 per year.

Quarantine on Bridge Lifted.—In response to a communication from Mayor Dores of Niagara Falls, Dr. F. Montizambert, director-general of public health, at Ottawa, informed the mayor that the quarantine on the Canadian side of the bridge on account of small-pox in Niagara Falls on the American side would be lifted at the end of March.

Dispensary Opened.—The Syracuse Free Dispensary, recently erected at 610 East Fayette Street, was thrown open to the public March 30. In the evening the formal opening ceremonies took place, at which Dr. Richard E. Cabot, Boston, delivered the chief address. Chancellor James R. Day formally tendered the dispensary the use of the basement and the first two floors of the building together with the equipment.

Personal.—Dr. Sedgwick E. Austin, Auburn, who has been seriously ill with septicemia, is reported to be improving.——Dr. George G. Whitaker, city physician of Fulton, has resigned.——Dr. Robert S. Reed, bacteriologist at the Geneva experiment station, has been appointed a member of the New York Milk Commission.——Dr. George R. Kinne, Syracuse, who has been seriously ill at the Hospital of the Good Shepherd, is reported to be improving.

Christian Science Bill Passes Senate.—The McClelland-Thorn bill permitting christian scientists to treat the sick has passed the assembly and the senate and been sent to the governor for his signature. This bill amends the medical law so that people of the state may resort to christian science for help without violating the provisions of the medical practice act. It exempts from this act "any person who ministers to or treats the sick or suffering by mental or spiritual means without the use of drugs or any material remedy." During the meeting of the Medical Society of the County of New York on March 23 telegrams were sent to the senate and assembly protesting against this bill and the chiropractic and naturopath bills now before the legislature.

New York City

Councilman to Speak in Brooklyn.—Dr. William T. Councilman, Boston, will deliver an address on "Glioma" before the Brooklyn Pathological Society, April 9.

To Lift Debt on Blind Home.—The New York Association for the Blind has inaugurated a campaign to raise $300,000, part of which is to be applied to the mortgage of the new Lighthouse on East Fifty-Ninth Street and the remainder to form a working fund for the institution. Forty-one thousand dollars have already been subscribed toward the fund.

Hospitals Accused of Transferring Dying Patients.—A report made by the Hospital Investigating Committee to the Board of Estimate recently condemns private hospitals which receive city aid for emergency service for sending dying patients to Bellevue and Kings County hospitals in order that their own death records may be kept as low as possible. Eighteen patients brought to Bellevue Hospital in private ambulances during the three-month period under consideration was considered evidence of the tendency of private hospitals to carry dying patients to Bellevue rather than to their own hospitals. The committee recommends that the Ambulance Board make rules to compel ambulances to carry dying patients to the nearest hospital.

NORTH CAROLINA

Confiscated Liquor to Go to Hospitals.—The hospitals of Raleigh have received from the municipal court several hundred bottles of fine liquor, confiscated by the court from five negro druggists convicted of the illegal sale of alcoholic liquors.

Personal.—Dr. Lewis B. McBrayer, Asheville, has been elected superintendent of the North Carolina State Sanatorium for Tuberculosis, Montrose, and director of the Bureau for the Prevention of Tuberculosis, recently established by the State Board of Health. In addition to the superintendency, Dr. McBrayer will have charge of the extension of the antituberculosis crusade throughout the state.——Dr. M. Hall Fletcher, Asheville, has been elected a member of the Buncombe County Board of Health, vice Dr. Lewis B. McBrayer, resigned.——Dr. Carl V. Reynolds, Asheville, has been elected health officer of the city, to succeed Dr. Lewis B. McBrayer, resigned.

NORTH DAKOTA

New Officers.—University Medical Society at Grand Forks: president, Solveig Thordarson; secretary, Elmer Hancock.

Personal.—Dr. Clarence E. Lommen has been appointed local surgeon for the Soo System at Fordville.——Dr. Albert M. Fisher, Bismarck, has been appointed physician of the state penitentiary.

OHIO

Campaign for Hospital.—A committee has been appointed to raise $500,000 for St. Luke's Hospital, Cleveland. The money will be used to liquidate an indebtedness of $100,000 and to erect additional buildings for the institution, including a new power-house and service building.

Personal.—Dr. Marie S. Perfect, Columbus, who was struck by a street-car and seriously injured recently, is reported to be convalescent.——Dr. William C. Hayes has succeeded Dr. Edward V. Hug as health officer of Lorain.——Dr. Thomas K. Wissinger, Columbus, was seriously injured in a collision between his automobile and a trolley car, March 18.

Cincinnati

Personal.—Dr. Herbert A. Brown has resigned as workhouse physician.——Drs. J. Henry Schroeder and Sidney Lange sustained severe injuries in a collision between the automobile in which they were riding and another motor car, March 16.

Small-Pox Annex.—Considerable controversy has arisen over the location of the small-pox annex of the new City Hospital. Property owners residing near the new hospital have entered protest against having the annex located in that vicinity, while a suggestion to place it near the tuberculosis branch has met with opposition on the part of the Antituberculosis League. At a meeting of the Academy of Medicine, March 23, the consensus of opinion was in favor of placing it near the new general hospital.

Health Board Members Resign.—Four out of six of the members of the Cincinnati Health Board resigned, March 25. Those who resigned were Drs. Edward W. Walker, George A. Fackler, Clifford Schinkal and William Breed. The only other medical member of the board was not present at the meeting which precipitated the resignations. The trouble is said to have been due to a remark of the mayor's regarding the manner in which the Health Department officials were appointed, in which he intimated that the board was "playing politics."

OREGON

Cancer and Tuberculosis Symposium.—At the meeting of the City and County Health Officers in Portland, March 21, symposiums were held on cancer and tuberculosis.

Medical College Site Donated.—Twenty acres of land in South Portland, valued at $100,000 have been donated as a site for the campus and buildings of the Medical School of the University of Portland, by the Oregon-Washington Railroad and Navigation Company, the terms stipulating that the site may be used for public purposes, such as a hospital or institutions for the furtherance of scientific research and investigation, and teaching along such lines.

Conservation of Vision.—Dr. Calvin S. White, Portland, president of the Oregon State Medical Society, has appointed the following commission: Dr. Joseph L. McCool, Portland, chairman; Drs. John F. Dickson, William L. Wood, Frank B. Eaton, George Ainslie and Ralph A. Fenton, Portland; Dr. Claude M. Pearce, Baker; Dr. Jocelyn J. Emmens, Medford, and Dr. Justin M. Waugh, Hood River. This commission is empowered to appoint an advisory commission to consist of one educator, one architect, one railway official, one press representative, one lumberman, one illuminating engineer, one banker, one merchant and the superintendent of the State School for the Blind.

PENNSYLVANIA

Personal.—Dr. Stanley F. Druckenmiller, Lansford, has been appointed medical inspector of the Lehigh and New England Railroad.——Dr. William L. Crawford, Dillsburg, who has benn ill from appendicitis, is reported to be improving.

Small-Pox in Chester County.—Nine cases of small-pox have been discovered in Chester County. Two at Toughgenamon, near Kennett Square. The 450 residents of the village were ordered to be vaccinated. Church services have been ordered discontinued and the public schools were closed.

Medical Pantheon for Wilkes-Barre.—Plans are being prepared for the Luzerne County Medical Society building, to be erected on South Franklin Street, Wilkes-Barre. The building will have a large circular auditorium and a domed ceiling. On the first floor the library of the society will be housed, and there will also be club rooms for members; on the second floor there will be the directors' room, committee rooms and check room.

Philadelphia

Hospital Addition.—Work was started, March 26, on another building for medical cases at the Jewish Hospital, Old York Road and Tabor Street. The new structure will cost $60.000 exclusive of the ground and will be of stone and brick, two stories and a basement.

Personal.—Dr. Charles A. Groff has resigned as assistant chief medical inspector of the Bureau of Health.——Dr. Samuel S. Woody, having successfully passed the civil service examinations, has been appointed chief resident surgeon of the Philadelphia Hospital for Contagious Diseases.

Gifts to Woman's College.—In addition to the gifts of $16.000 noted in The Journal of March 21 for the endowment fund of the Woman's Medical College of Pennsylvania, and erroneously attributed to the Woman's Hospital, an additional anonymous gift of $5,000 has been received, and one of the incorporators, recently deceased, has left a bequest of $1,000 for the endowment fund of the college.

Farm for Feeble-Minded.—Plans are being perfected to raise $10,000 by private subscription to establish a colony for the temporary care of feeble-minded children in eastern Pennsylvania, until the legislature appropriates money for permanent quarters. More than twenty-five offers to lease or sell farms within 30 miles of this city have been sent to Dr. Walter S. Cornell, chief medical school inspector. Several places have been inspected, but a farm of about 100 acres is desired.

Site for New Hospital Building.—Eighteen two- and three-story brick dwellings adjoining St. Mary's Hospital, Frankford Avenue and Palmer Street, have been purchased by the Sisters of the Third Order of St. Francis of Assisi. These buildings will be torn down to make way for a new hospital building. The conveyance of these properties give to the hospital an additional frontage of 70 feet on Palmer Street and of 270 feet on Sepviva Street. The old hospital building on the corner of Frankford Avenue and Palmer Street will be torn down to make way for part of the new building.

Hospital Efficiency Meeting.—More than one hundred hospital representatives attended a meeting called by the Philadelphia County Medical Society, March 25. The speakers were Dr. Edward Martin, who presided; Dr. Robert G. LeConte, Dr. George E. de Schweinitz, W. B. S. Thorne, vice-president and treasurer of the Union Pacific Railroad Company, Bromley Wharton, secretary of the State Board of Charities, and Alexander M. Wilson of the Department of Health and Charities. A resolution to adopt the work being done by the committee on hospital efficiency was adopted unanimously.

Inebriates Off Hospital's Pay Roll.—On March 23, Superintendent Walsh, put a new regulation into effect, that inebriates admitted to the Philadelphia General Hospital for treatment will be barred from appointment on the hospital roll to do light work with pay. Acting Director Wilson found that inebriates recurrently had themselves committed to the hospital where they would perform duties of cleaners, attendants or orderlies, and receive from $5 to $20 a month, and thus earn enough money to start on another debauch. During the last six months, eighty-three male convalescents were placed on the pay roll, of whom forty-three were from the inebriate wards.

SOUTH CAROLINA

Personal.—Dr. Thomas J. Lancaster has succeeded Dr. James W. Babock as superintendent of the State Hospital for the sane, Columbia.——Dr. George A. Hennies, Chester, sustained inful injuries in a runaway accident, March 19.

Hospital for the Study of Pellagra.—Congress has authorized establishment of a hospital at Spartanburg for the care d study of patients with pellagra. A bill for the estab-hment of a hospital by the state for the study of this dis-se was recently defeated in the legislature. The Thompson-Fadden Pellagra Commission has made Spartanburg its headquarters during the past two years. The establishment of the federal hospital should greatly facilitate the work of the commission.

VIRGINIA

Public Health Meeting.—The meeting of the Virginia Public Health Association will be held April 23-24, at the University of Virginia, Charlottesville.

License Exemption Bill Becomes Law.—Governor Stewart permitted Senate Bill 70, which exempts physicians from the payment of licenses to the state, to become law without his signature. This fight has been carried on by the physicians of the state for many years, and there is general rejoicing over the victory.

Small-Pox in the State.—March 21, it was estimated that there were 500 cases of small-pox in the state, the state health commissioner stating that the disease was prevalent in 40 per cent. of the counties. The commissioner also stated that the disease has been more virulent this year than for a long time past. In two instances the disease attacked the heads of families who had for years defied and resisted attempts to have them vaccinated. They then lost no time in having the members of their families vaccinated.

Personal.—Dr. Meads Ferguson, Richmond, has resigned as city bacteriologist to become editor of the *Southern Planter*.——Dr. Francis Randolph Crawford, Kernstown, a medical missionary of the Southern Presbyterian Church, has sailed from Europe for Shanghai.——Dr. T. Edward Baird, Norfolk, has been appointed medical quarantine officer of the Elizabeth River District, vice Dr. Frank H. Hancock.——Dr. Knox E. Miller. Richmond, for two years hookworm inspector of the state, has resigned and been succeeded by Dr. Albert P. Traynham, Richmond.

WASHINGTON

Personal.—Dr. Cline F. Davidson, chief medical examiner of the Seattle Health Department, has resigned, and the position is to be abolished.——Dr. Walter E. Keehl, Cle Elum, sailed for Europe March 28.

Vetoes Rat-Killing Bill.—An appropriation of five thousand dollars to pay the salaries of thirty rat catchers who have been employed in the antiplague campaign at Seattle was vetoed by Mayor Gill. This was done in face of the report that plague infected rats have recently been found on the water fronts of the city.

GENERAL

Monument to Finlay.—Friends of Dr. Carlos J. Finlay, Havana, Cuba, have decided to raise funds to erect a monument in his honor. The funds on hand have been raised by popular subscription. Dr. Finlay, who was the first person to put forth the theory of the transmission of disease by the agency of mosquitoes, has retired from active work.

Mental Hygiene Election.—The sixth annual meeting of the National Committee of the Society for Mental Hygiene was held in New York City, March 10. Dr. Lewellys F. Barker, Baltimore, was elected president; Dr. William H. Welsh, Baltimore, vice-president; Dr. Thomas W. Salmon, New York City, director of special study, and Mr. Clifford W. Beers, New York City, secretary.

Meeting of Pacific Coast Oto-Ophthalmologic Society.—At its coming meeting in Seattle, July 1-3, 1914, the Pacific Coast Oto-Ophthalmologic Society will have as a guest, Col. Robert H. Elliot of London, who will deliver an address and demonstrate his operative methods, including the trephining operation for glaucoma. The territory embraced by the membership includes the states west of the Rocky Mountains and also British Columbia.

International Surgical Association.—The fourth triennial meeting of this association will be held in New York City, April 13 to 16. The program is to be limited to the consideration of three main topics: (1) Gastric and duodenal ulcers, with papers by De Quervain, Balse, Hartman and Lecène, Paris; Mayo, Rochester, Minn.; Moynihan, Leeds, and Payr, Königsberg. (2) Grafts and transplantations, with papers by Morestin, Paris; Villard, Lyons; Ulmann, Vienna; Lexer, Jena, and Carrel, New York. (3) Amputations, with papers by Witzel, Düsseldorf; Ceci, Pisa; Kusmik, Budapest; Binnie, Kansas City; Durand, Lyons, and Ranzi, Vienna. Foreign members have been invited to attend the meeting of the American Surgical Association in New York, April 9 to 11. At the close of the session, April 16, many of the foreign surgeons will make a tour; the itinerary will include Philadelphia, Baltimore, Washington, Chicago, Rochester, Minn., and Boston.

Bequests and Donations.—The following bequests and donations have recently been announced:

Maimonides Kosher Hospital, Chicago, an additional donation of $9,000 by Abraham Slimmer, Dubuque, Iowa.

Beverly (Mass.) Hospital, toward the Charles Ingalls Giddings Memorial Fund, one-half the remainder of the estate of Mrs. Martha P. Webb, Brookline, of $40,000, after payments of bequests.

Boston Baptist Hospital, Perkins Institute for the Blind, Massachusetts Eye, Ear, Nose and Throat Infirmary, each $1,000 by the will of Miss Sarah E. Pratt.

Long Island College Hospital, Brooklyn, Brooklyn Home for Consumptives, Brooklyn Hospital, and the House of St. Giles the Cripple, each one-tenth of an estimated estate of $200,000 by the will of Mrs. Matilda E. Webb.

Stony Wold Sanatorium, St. Rose's Free Homes for Incurable Cancer, and the New York Medical College and Hospital for Women, each $3,000 by the will of Mrs. E. N. Andreas.

State Orthopedic Hospital, Lincoln, Neb., and Home for Dependent Children, each about $50,000 by the will of Charles Geunchi.

Episcopal Hospital, Philadelphia, $5,000; one-half of the residuary estate, valued at $100,000, to revert after the death of the legatee to St. Martin's College for Boys, Home of Rest, Episcopal Hospital, Home for Crippled Children, Philadelphia; and the proceeds of the sale of the house eventually to be given to the Pennsylvania Hospital for the endowment of a free bed in the children's ward, in memory of Mary M. McNamany, by the will of Margaret A. May.

FOREIGN

Leprosy in Germany.—The cable states that the wife of a government official at Danzig, Germany, has been certified as leprous and has been sent to a lepers' hospital.

Plague at Havana.—Under date of March 25 three new cases of plague were reported at Havana. The persons attacker are Spaniards employed as clerks by a sugar firm.

Archives for Eugenics.—The latest new periodical on this science is the *Archiv für Frauenkunde und Eugenik*, founded by Dr. Max Hirsch of Berlin and issued by the Kabitsch publishing house at Würzburg.

Death of Joachimsthal.—One of the leading orthopedists of Germany, Prof. G. Joachimsthal of Berlin, died recently, aged 50. He founded in 1900 a private clinic for orthopedic surgery. Since Hoffa's death, in 1908, he has been chief of the university clinic for orthopedic surgery, and has written extensively on this specialty.

International Congress of Medical Radiology.—The seventh international gathering to discuss the medical aspects of electrology and radiology is to meet this year at Lyons, France, July 27-31, with Professor Renaut in the chair. Among the seven addresses is one by Lumière, of color photography fame, on the action of Roentgen rays on the photographic plate; one on clinical electrocardiography by Nicolai of Berlin, and Vaquez and Bordet of Paris. Schnee will discuss ionotherapy, and Doumer the action of high frequency electric currents on surgical tuberculosis, while Falta of Vienna and Sommer of Zurich will discuss radium. A prize of $200 is offered for the apparatus for electrodiagnosis best fulfilling certain conditions formulated at the Barcelona congress in 1912. There were no apparatus presented at the congress last year deemed worthy of this prize.

Official Investigation of Salvarsan Demanded.—The medical members of the German Reichstag (Drs. Becker, Gerlach, Schatz and Struve) recently asked for an official report from the imperial chancellor on the questions (1) as to the truth of the reports now circulating in the lay and medical press that several hundred fatalities have already followed the treatment of syphilitics with salvarsan and that permanent or transient injury of the health has resulted; (2) whether salvarsan is dispensed without a physician's prescription; (3) whether the amount of arsenic contained in salvarsan is several times the maximal dose established in the Pharmacopeia, and (4) whether the fatalities and injury of the health are to be ascribed to the arsenic content of the salvarsan.

The official answer to these questions is given in full in our German exchanges of March 10. It states in effect that as physicians are not required by law to report cases of serious injury from salvarsan, the authorities have no official data on the subject. The cases that have been published in medical literature can be explained in part by injudicious selection of patients, by defective technic or by peculiar features of the disease, and in part by the arsenic content of the salvarsan in especially susceptible persons. According to the evidence to date, only part of the injuries can therefore be ascribed to the toxic action of the salvarsan. The general verdict of approval and appreciation of salvarsan is cited, and the concluding paragraph states that the single dose of salvarsan ranges from 0.1 to 0.6 gm. arsenic. This is in fact several times the corresponding maximal dose of arsenic in arsenous acid (0.004 gm.). It must be remembered, however, that according to the professional press, the arsenic in salvarsan is in a materially less toxic form than in arsenous acid.

CANADA

Canadian Medical Association Meeting.—Dr. Thomas McCrae, Baltimore, is to deliver the address in medicine at the Canadian Medical Association meeting, St. John's, N. B., July 7-10; Dr. J. Rutherford Morison, professor of surgery, University of Durham, Newcastle-on-Tyne, England, the address on surgery; Dr. Robert Jardine, professor of midwifery, St. Mungo's College, Glasgow, Scotland, the address in obstetrics, and Dr. Charles A. Hodgetts, Ottawa, the public lecture.

New Health Code for Montreal.—One of the first measures to come before the new city council of Montreal is the establishment of a new board of health. A health code for that city has been drawn up after considerable labor by a special commission, with Dr. Emmanuel P. Lachapelle as chairman. The board of health will consist of the mayor and four aldermen, to hold office for two years. The new health code will provide for the complete abolition of all cesspools throughout the city and of all dark rooms in dwellings. Five hundred cubic feet of air space for each person and 50 square feet per head in houses will be another requirement. Schools and industrial establishments will also come in for regulation, employees to be given 400 cubic feet of air space. This means the inspection of industrial establishments.

Hospital News.—For a new private pavilion for the Royal Victoria Hospital, Montreal, a few thousand dollars has been collected. Mr. J. K. L. Ross will bear the balance of the cost, between $250,000 and $300,000, as a tribute to the memory of his late father, Mr. James Ross. Drs. Walter W. Chipman and George E. Armstrong, feeling the need for the pavilion, had each contributed $1,000. The new wing will be located immediately behind the main structure, but a separate unit. it will have accommodation for about 150 patients.——The Ontario government has introduced a bill into the legislature of that province to enable Toronto to establish a detention home for insane persons. It will incorporate the agreement between the Toronto General Hospital, the City Council and the Ontario government. It will also provide that in Ontario cities of over 100,000 population, reception homes may be provided for on the authority of the governor-in-council, plans and sites selected to be subject to the approval of the government. These hospitals will be under the control of the department of the government having to do with all hospital administration, and the cost of maintenance other than that provided by municipalities to be borne by the government.

Workmen's Compensation in Ontario.—In the bill now before the Ontario legislature to provide for workmen's compensation, no provision is made for the payment to physicians for services rendered to employees suffering injury. The physician will simply have to look to the injured one for payment. The Academy of Medicine, Toronto, and the Ontario Medical Council do not consider this fair to the medical profession, nor even to the working man, and have accordingly suggested certain amendments to the bill. The act will be administered under a commission of three, which will appoint a chief medical officer, medical referee, a secretary and others. The accident fund to provide for compensation will be raised by a levy on a percentage basis of wages paid, and certain industries are classified into distinct sections. The bill is modeled more after the German than the British law, and the industrial diseases mentioned for compensation are the same as originally set out in the British act. While the working classes are possibly just as good pay from the physicians' standpoint as other classes of the community, it seems considerably unfair that an act in the interests of the working man primarily should make him responsible for medical services rendered in case of accidents occurring while he was working for another man or employer.

LONDON LETTER

(From Our Regular Correspondent)

London, March 13, 1914.

State Provision for the Blind

In the United Kingdom there are between 32,000 and 34,000 blind persons. Of these it is estimated that 5,000 are in workhouses, 5,000 are receiving parish relief and 7,000 are begging their bread. Only 3,000 are employed in voluntary institutions, and there the wages earned average only about $2.50 per week. About 5,800 receive a small pension averaging not more than $50 per year from charitable organizations. The subject of the care of the blind has been under discussion in the House of Commons. A labor member, Mr. Wardle, brought forward a motion that "the present system of voluntary effort in aid of blind people of this country does not adequately meet their necessities and that the state should make provision by which capable blind people may be made industrially self-supporting and the incapable and infirm be maintained in a proper and humane manner." Another member pointed out that about 5,000 of the blind would not have been so if they had received proper attention at birth. On behalf of the government Mr. J. H. Lewis, parliamentary secretary to the Local Government Board, said that although blindness was diminishing this was no reason for not taking action. Indeed it was an argument for beginning action because the matter had now assumed more manageable proportions. The state had already done something in ensuring the elementary education of blind children, and further steps were about to be taken. With regard to secondary or technical education, the voluntary institutions had done their best with the limited means at their disposal. Private charity had been poured out bountifully for the blind, but admirable as the work had been, there was more to be done. The time had arrived when a forward step would be taken, and the government would immediately appoint a committee to consider the question.

The Royal Commission on Venereal Diseases

At the twentieth meeting of the Royal Commission on Venereal Diseases, Mr. C. A. Ballance, chief surgeon to the Metropolitan police and surgeon to St. Thomas' Hospital, said that the amount of venereal disease among the police was slight. Formerly policemen reporting themselves sick from venereal diseases were looked on as defaulters and their pay was stopped. In 1911 the system was entirely changed and venereal disease was treated like ordinary sickness. The result had been that most of those affected have reported themselves sick to the divisional surgeon and have not tried to keep it secret. As many patients as can be accommodated are sent to the military hospital, but if that hospital is unable to receive them they are sent to the nearest general hospital. The change of system had the good effect of securing early treatment. From his experience at St. Thomas' Hospital Mr. Ballance thought that the number of serious cases of venereal disease were diminishing. This he attributed to early treatment. He much doubted whether the actual prevalence had diminished.

At the twenty-first meeting Dr. Brian O'Brien, medical inspector of the Local Government Board for Ireland, said that his impression was that there was a decline of venereal disease in the country districts and small towns of Ireland. Venereal disease, especially syphilis, was almost non-existent in the rural portions of Ireland, and uncommon in the smaller towns. In Dublin there was a special prevalence, and among the causes contributing to this he mentioned poverty, bad housing and the fact that Dublin is the refuge of persons from the greater part of Ireland who are doing no good for themselves. There was also some prevalence of the disease in Belfast, but to a much less extent than in Dublin. He considered that the treatment of the disease in Ireland was at present very inadequate. His two main recommendations were that means should be provided for improving diagnosis and that institutional treatment should be subsidized. Outpatient departments of general hospitals should be open in the evening. He was opposed to notification of venereal disease. He did not think that the medical profession would be willing to notify, and if they did fewer persons would go to physicians for treatment.

PARIS LETTER

(From Our Regular Correspondent)

Paris, March 13, 1914.

Compulsory Antityphoid Vaccination and Medical Responsibility

I have already mentioned (The Journal, March 10, 1914, p. 139) the passage in the Senate of a bill to make antityphoid vaccination compulsory in the active army. This bill raises an important problem of the professional responsibility of physicians, which was discussed at the last session of the Société de médecine légale. It is not easy to determine the contra-indications to antityphoid vaccination in the case of recruits whose past history and organic defects are unknown to the regimental physicians. Every year the recruits with defective constitutions are eliminated a few at a time, the annual number being between 7,000 and 8,000. It is quite possible that several of these men who are sent home for threatened or incipient tuberculosis and who have been vaccinated against typhoid before their dismissal, will attribute the development of their disease to this vaccination and will bring suit for damages, which may be awarded them. In such a case who will be responsible—the physician who performed the operation or the government which required it? The bill as passed by the senate requires all the soldiers to be vaccinated without exception. The society therefore passed a resolution that some exceptions should be made in the law.

Rubber Grafts

As a general thing, the insertion of foreign bodies in the human organism as a substitute for lost tissue has not hitherto been very successful. Fragments of bone and ivory are finally absorbed after having served as supports for the regeneration of new tissue. Such substances as silver become encysted or eliminated by the suppuration which they cause. Rubber, which has the advantage of being tolerated by living tissues without becoming absorbed or encysted, has been employed by Dr. Pierre Delbet, professor of clinical surgery at the Faculté de médecine de Paris, to repair loss of tissue and to prevent undesirable adhesions. Victor Henri has shown that the latex or sap of the rubber-tree is an emulsion of fine grains, measuring from 0.05 to 2 microns, bearing a negative electric charge. It acts like a negative colloid and therein resembles the colloids of blood-serum which are likewise electronegative. The rubber used by Delbet is produced by evaporating the sap of the rubber-tree and adding 2.5 per cent. of sulphur. Does this preserve the properties of the living sap? It may be assumed that it does, since all serotherapy is based on the fact that certain biologic properties of blood-serum are preserved *in vitro*. The molecular equilibrium of rubber, like that of living substances, is maintained better while it is in use. Rubber of which the elastic properties are frequently brought into play lasts longer than that which is unused. Such qualities are intermediate in some degree between those of inert matter and those of living matter.

Delbet asks if these "paravital" properties of rubber are not parallel with those of animal tissues. Daily experience proves that human tissues undergo no appreciable reaction in contact with rubber drains. Tuffier and Carrel have shown that the circulating blood does not cooperate in contact with a sheet of rubber. Delbet found that rubber remained intact for a long time in the tissues. In 1886 he found in a maxillary cyst a rubber drain which had been forgotten by Chassaignac more than twenty years before and which was intact. In the physicochemical conditions furnished by living tissues, therefore, rubber lasts much longer than on a shelf and thus shows a certain resemblance to the colloids. Delbet used rubber grafts in two cases which he reported to the Académie de médecine. In the first patient, who had an adhesion of the tendon of the extensor longus, Delbet, after breaking up the adhesion, placed a thin sheet of rubber between the bone and the tendon, which resumed its functions. The operation was performed more than eight months ago and the rubber graft has given no trouble. Another still more interesting case was of an enormous hernia of the large intestine. Delbet repaired the abdominal wall with a thick sheet of rubber 7 by 3 cm. Reunion was accomplished without the least sign of irritation. The operation had been performed only a few days before the report. The patient suffered no discomfort; the abdominal wall was solid.

Fieschi used rubber in a different way. He employed a very porous tissue (rubber sponge) in order to obtain incorporation by penetration of the granulations into the areolae. This method may be very interesting. Delbet has begun experiments to learn if the elasticity of rubber grafts cannot be utilized. Whether this be so or not, he believes that rubber grafts are destined to render greater service in surgery.

Deaths from Salvarsan

Drs. Morel and Mouriquand of Lyons, who have been investigating the organotropism of salvarsan for three years, have found two classes of reactions of the organism. In animals which tolerate the injection well, the urinary elimination of arsenic is rapid and intense. No organotropism is found by searching for arsenic in the viscera of an animal killed three or four days after injection. Animals belonging to a second and smaller class rapidly succumb to intoxication because of the almost total retention of arsenic, *principally at the level* of the liver (hepatotropism). The practical conclusion to be drawn from these researches is that before undergoing the Ehrlich treatment patients should have a test injection of a very small dose, and arsenic should be sought in the urine. If the elimination of arsenic is absent, slight or delayed, the second injection should be postponed or made with great caution.

Marriages

Newton Edward Wayson, M.D., San Francisco, to Miss Anne T. Ewing of Portland, Ore., at San Francisco, March 14.

Marshall Triplett Hoover, M.D., Palmer, W. Va., to Miss Emma Boggs of Bois, W. Va., in Clarksburg, W. Va., March 9.

Alfred E. Rives, M.D., to Miss Helen Lawrence, both of East St. Louis, Ill., at Louisville, Ky., March 2.

Iván Earnest Brenner, M.D., Winchester, Ind., to Miss Anna Marlatt of Connersville, Ind., March 3.

Lunsford M. Thompson, M.D., Reardan, Wash., to Miss A. Winnington of Spokane, Wash., March 17.

William Henry Gilbert, M.D., to Mrs. Jessie Shawler, both of Evansville, Ind., in St. Louis, March 20.

Abram L. Sherick, M.D., Ashland, Ohio, to Miss Elsie Cross of Lima, Ohio, March 19.

Deaths

Egbert Le Fevre, M.D. dean of University and Bellevue Hospital Medical College, New York City; died March 30, from scarlet fever, aged 55. He was born in Raritan, N. J., October 29, 1858, received his A.B., A.M. and Sc.D. degrees from Rutgers College, and was graduated from the University of the City of New York Medical Department in 1883. He served two years as intern in Bellevue Hospital, and in 1888 became clinical lecturer on practical medicine in his Alma Mater. In 1890 he was made professor of clinical medicine; in 1895, adjunct professor of medicine, and since 1898 has been associate professor of therapeutics, professor of clinical medicine, and dean of the faculty of the united colleges. He was visiting physician to the City Hospital in 1894 and 1895, and to Bellevue Hospital and St. Luke's Hospital since 1898; and was also consulting physician to Beth Israel Hospital. He was a Fellow of the American Medical Association and the New York Academy of Medicine, and a member of the American Climatological Association, and National Association for the Study and Prevention of Tuberculosis. He was also the author of a standard work on "Physical Diagnosis," which appeared in 1902.

George McNaughton, M.D. Bellevue Hospital Medical College, 1878; a Fellow of the American Medical Association; for five terms president of the Medical Society of the County of Kings; a fellow of the American Gynecological Society and the New York Academy of Medicine; clinical professor of gynecology in Long Island College Hospital; visiting gynecologist to Long Island College, Kings County, Eastern District and Brooklyn hospitals; consulting gynecologist to the Long Island State Hospital, Jewish Hospital and Central Dispensary; died at his home in Brooklyn, March 17, from heart disease, aged 57.

Daniel B. Cornell, M.D. Detroit College of Medicine, 1889; a Fellow of the American Medical Association; professor of diseases of the eye, ear, nose and throat in the Michigan College of Medicine and Surgery, Detroit; one of the founders of the Saginaw Valley Medical College; oculist and aurist to the Women's Hospital, Saginaw; district examiner as to sight, hearing and color perception for the Cincinnati, Hamilton and Dayton and Pere Marquette systems; died at his home in Saginaw, March 21, from septicemia, due to an ulcerated tooth, aged 59.

John Laing Leal, M.D. College of Physicians and Surgeons, New York City, 1884; a member of the Medical Society of New Jersey; president of the New Jersey State Sanitary Association; consulting surgeon to the Paterson Hospital; examiner in hygiene in Rutgers College; for many years president of the Paterson Board of Health, and sanitary adviser of the East Jersey Water Company; an authority on water-supply; died in St. Joseph's Hospital, Paterson, March 13, from diabetes, aged 55.

Henry Sykes, M.D. University of Pennsylvania, Philadelphia, 1884; at one time a member of the staff of the State Hospital for the Insane, Norristown, Pa.; for eighteen years chief resident physician of the Episcopal Hospital, Philadelphia; and for eight years occupying a similar position at the Philadelphia General Hospital; died March 19 in the Jefferson Hospital, Philadelphia, from cancer of the mouth, for which operation had been performed without success, aged 52.

William Coe Monroe, M.D. Bellevue Hospital Medical College, 1870; a Fellow of the American Medical Association; and first president of the Woonsocket District (R. I.) Medical Association; health officer of Woonsocket since 1900; for eight years coroner and medical examiner and a member of the school committee; a member of the staff of the Woonsocket Hospital, and for several years chief of staff; died at his home, March 11, from heart disease, aged 64.

William Perry Weaver, M.D. Cincinnati College of Medicine and Surgery, 1871; a Fellow of the American Medical Association; a member of the Board of Health of Miamisburg, Ohio; district surgeon of the Big Four system, and local surgeon for the Cincinnati, Hamilton and Dayton Railway; died at his home, March 8, from cerebral hemorrhage, aged 62.

George Franklin Roberts, M.D. Rush Medical College, 1872; New York Homeopathic Medical College, 1881; a Fellow of the American Medical Association; consulting physician to Asbury Hospital, Minneapolis; professor of gynecology in the University of Minnesota from 1895 to 1904; died at his home in Minneapolis, March 21, from pneumonia, aged 65.

George Oakley Welshman, M.D. College of Physicians and Surgeons, New York City, 1895; of Newark, N. J.; a Fellow of the American Medical Association; while crossing the tracks of the Delaware, Lackawanna and Western Railroad at East Orange, N. J., in his automobile, March 17, was struck by an express train and instantly killed.

Thomas Wesley Stumm, M.D. Rush Medical College, 1901; of St. Paul, Minn.; a Fellow of the American Medical Association, and once president of the Ramsey County Medical Association; a member of the staffs of St. Luke's, St. Joseph's and the St. Paul City Hospital; died in Vienna, Austria, March 20, from heart disease, aged 42.

Percy Shields, M.D. Miami Medical College, Cincinnati, 1897; a Fellow of the American Medical Association; professor of medicine on the clinical staff of his Alma Mater; a specialist on anesthesia; a member of the staff of the Cincinnati City Hospital and Jewish Hospital; died at his home in Cincinnati, March 9, aged 39.

Charles E. Thayer, M.D. Northwestern University Medical College, Chicago, 1883; Chicago Homeopathic Medical College, 1886; a Fellow of the American Medical Association; and president of the Green Lake County (Wis.) Medical Society; of Markesan; died in Fond du Lac, March 14, from heart disease, aged 54.

Joseph Lowrie Ingle, M.D. New York University, New York City, 1871; a member of the Medical and Chirurgical Faculty of Maryland; formerly physician-in-charge of Sydenham Hospital, Baltimore; died at his home in that city, March 20, from angina pectoris, aged 67.

Abram A. Sulcer, M.D. Rush Medical College, 1866; for many years a practitioner of Los Angeles; aged 75; died at his home in Riverside, March 14, as the result of injuries received a few hours before in a collision between motor-cars on the Box Springs grade.

Francis S. Kennedy, M.D. New York University, New York City, 1891; of Brooklyn, N. Y.; for many years connected with the Seventh Infantry, N. G. N. Y., and later a resident of Toronto, Ont.; died in the Brooklyn Hospital, March 17, aged 58.

Albert R. Fellows (license, Maine, 1895); chairman of the health board of Winterport, Maine, and local surgeon for the Winterport Railroad; for forty years a practitioner; died while making a professional call in Bucksport Center, March 5, aged 62.

James Nicholas Butler, M.D. Bellevue Hospital Medical College, 1888; one of the founders and first dean of the Medical Department of Fordham University; for many years a member of the visiting staff of St. Francis' Hospital; died at his home in New York City, March 14, from heart disease, aged 53.

Jesse J. Stringer, M.D. Chattanooga, Tenn., Medical College, 1905; a member of the Mississippi State Medical Association; and a practitioner of Oak Vale; died in that place, March 14, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, aged 42.

John Joseph Loftus, M.D. Medico-Chirurgical College of Philadelphia, 1903; formerly of Denver, Colo., but for the last two years a practitioner of Scranton, Pa.; died in St. Vincent's Hospital, Denver, March 10, from pneumonia, aged 39.

Woodward David Carter, M.D. Hahnemann Medical College, Philadelphia, 1894; for several years instructor in gynecology in his Alma Mater; died at his home in Philadelphia, March 17, from influenza, aged 46.

Samuel Perry, M.D. Medical College of the State of South Carolina, Charleston, 1854; a member of the Medical Association of the State of Alabama; a Confederate veteran; for many years a practitioner of Birmingham; died at the home of his daughter in Marion, Ala., March 18, aged 80.

Frank D. Stolzenbach, M.D. Hahnemann Medical College, Philadelphia, 1904; aged 35; a Fellow of the American Medical Association; of Pittsburgh; was found dead in a farmhouse near Wellesley, Mass., March 13, from the effects of a gunshot wound of the heart.

James T. Cushenbury, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1875; formerly of Medicine Lodge, Kan.; a physician and banker of Wann, Okla.; died in a hospital in Wichita, Kan., March 11, after a surgical operation, aged 64.

Thomas A. Allen, M.D. Medical College of the State of South Carolina, Charleston, 1853; one of the oldest residents of Hendersonville, N. C.; died at the home of his daughter in South Nashville, Tenn., March 11, from pneumonia, aged 89.

George W. Milligan, M.D. Berkshire Medical College, Pittsfield, Mass., 1852; a practitioner of Sparta, Wis., for more than sixty years; once physician of Monroe County; died at his home in Sparta, March 15, from senile debility, aged 88.

John T. Jones, M.D. Tulane University, New Orleans, 1880; for twenty years physician to the stevedores', long-shoremen's and screwmen's organizations of New Orleans; died at the home of his brother in that city, March 11, aged 53.

R. H. Baylor (license, Tenn., 1889); a practitioner for more than fifty years; health officer of Houston County; a surgeon in the Confederate service during the Civil War; died at his home in Erie, March 9, from heart disease, aged 78.

Daniel Simmons, M.D. New York Homeopathic College, New York City, 1875; a veteran of the Civil War; chief of the consulting staff of the Cumberland Street Hospital, Brooklyn; died at his home in that city, March 18, aged 70.

William V. Loftus, M.D. Missouri Medical College, St. Louis, 1879; a member of the Missouri State Medical Association; for several years editor of a medical journal in Kansas City; died at his home in St. Louis, March 13, aged 64.

William Oliver Howard, M.D. Atlanta (Ga.) School of Medicine, 1908; a member of the Medical Association of Georgia; of Morgan; died at the Williams Sanatorium, Macon, March 6, after an operation for appendicitis, aged 31.

Christopher J. Miller, M.D. Western Reserve University, Cleveland, 1864; for many years a practitioner of Marion, Ohio; died in the Odd Fellows' Home in Springfield, Ohio, March 5, from senile debility, aged 80.

Charles Allen Smith, M.D. Barnes Medical College, St. Louis, 1897; formerly a practitioner of East St. Louis and De Land, Ill.; died in the West Side Hospital, Chicago, March 8, from cirrhosis of the liver, aged 78.

Abraham R. Shank, M.D. University of Pennsylvania, Philadelphia, 1867; a member of the Medical Society of the State of Pennsylvania; died at his home in Clear Spring, March 13, from pneumonia, aged 71.

Chester Lymann Hodgkins, M.D. Georgetown University, Washington, D. C., 1900; for two years a sanitary engineer in Ecuador, S. A.; died at his home in Park Falls, Wis., March 15, aged 43.

Samuel Schaie, M.D. University of Berlin, Germany, 1875; a member of the German Medical Society of New York; died at his home in New York City, March 19, from heart disease, aged 62.

Frank A. Weaver, M.D. Michigan College of Medicine, Detroit, 1881; a member of the Michigan State Medical Society; of Charlotte; died in a hospital at Oakland, Cal., March 6.

Herbert Bacon, M.D. Western Reserve University, Cleveland, Ohio, 1897; a nearly blind practitioner of Tiffin, Ohio; was accidentally drowned near Bloomville, Ohio, March 13, aged 38.

James A. Stevens, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1867; a surgeon of volunteers during the Civil War; died at his home in Eldon, Mo., about March 5, aged 70.

Henry C. Sawyer, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; a member of the Illinois State Medical Society; died at his home in Cornell, February 24, aged 68.

David Cabell Burks, M.D. Medical College of Virginia, Richmond, 1904; one of the proprietors of the St. Charles' Hospital, Roanoke, Va.; died in that institution, March 16, aged 43.

Nelson Bradley Coffman, M.D. Miami Medical College, Cincinnati, 1883; of Healdsburg, Cal.; died in St. Winifred's Hospital, San Francisco, March 5, from cerebral hemorrhage.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THEOBROMIN SODIUM SALICYLATE VERSUS "DIURETIN": THE ECONOMICAL ASPECT

[Contribution from the Chemical Laboratory of the American Medical Association]

W. A. Puckner and Paul N. Leech

The following inquiry is from Dr. Reid Hunt, recently appointed professor of pharmacology at Harvard Medical School:

> "Have you ever made an examination of the theobromin sodium salicylates on the market to determine if they are identical with 'Diuretin'? The description of theobromin sodium salicylate in New and Nonofficial Remedies agrees with the statements as to the composition of Diuretin, but I wondered if, at times at least, the theobromin sodium salicylate on the market might be a simple mixture of theobromin and sodium salicylate just as the Caffeinae Sodio-Salicylas, N. F., seems to be a simple mixture. Diuretin is quoted in current price-lists at $1.75 an ounce, whereas the price of theobromin sodium salicylate is only 35 cents an ounce. Many hospitals use diuretin, and both physicians and students often have only hazy ideas as to what it is. If the preparations of theobromin sodium salicylate now on the market are identical with Diuretin they should certainly be used, not only because they are less expensive, but because the descriptive name will continually remind the physicians of what they are using."

Theobromin for some time has been regarded as a valuable therapeutic agent. The obstacle to its use has been its insolubility and the consequent uncertainty of the degree of its absorption. For this reason a soluble salt of theobromin, theobromin sodium salicylate, first introduced and advertised under the proprietary name "Diuretin," has come to be used to a considerable extent.

Theobromin sodium salicylate—also called theobromin and sodium salicylate—is prepared by interaction, in molecular proportions, of theobromin, sodium hydroxid and sodium salicylate, the theobromin first being treated with sodium hydroxid in the presence of a suitable solvent, then the sodium salicylate added and the whole brought to dryness. The soluble compound which is formed is generally considered to be a double salt of theobromin sodium and sodium salicylate.

Theobromin sodium salicylate is described in New and Nonofficial Remedies and in several foreign pharmacopeias. It is also to be described in the forthcoming United States Pharmacopeia.

Although the product is not controlled by patents of any kind, and although it is offered for sale under its chemical name by the leading chemical manufacturers at from 35 to 45 cents per ounce, the proprietary product, Diuretin, sells for $1.75 an ounce. This is probably because the manufacturers think that those who have been using it under its chemically non-descriptive but therapeutically suggestive title, Diuretin, will remain ignorant of the fact that the same product is on the market under its chemical name. In view of these conditions, emphasized by Dr. Hunt's letter, it was deemed important to examine the market-supply of theobromin sodium salicylate and to compare the several specimens with the proprietary brand Diuretin.

The following specimens, purchased in 1-ounce original packages, were examined:

Diuretin, "Knoll," Knoll & Co.

Theobromine and Sodium Salicylate, Mallinckrodt Chemical Works.

Theobromine and Sodium Salicylate, Merck & Co.

Theobromine and Sodium Salicylate Powder, Powers-Weightman-Rosengarten Co.

Theobromine and Sodium Salicylate, "Roche," Hoffmann-La Roche Chemical Works.

Theobromine and Sodium Salicylate, Squibb, E. R. Squibb & Sons.

The theobromin content prescribed for theobromin sodium salicylate by the various standards ranges from 45 to 50 per cent., that of New and Nonofficial Remedies being the highest. A requirement of not less than 46.5 per cent. theobromin in the dried powder has been proposed for the new U. S. Pharmacopeia.

The methods of quantitative estimation laid down by the various authorities are all very similar and consist, in the main, of a determination of water, of the sodium hydroxid, free and in combination with theobromin, and of the theobromin itself. For the theobromin estimation the following method was employed:

A weighed sample (about 2 gm.) which had previously been dried, under slightly reduced pressure, over sulphuric acid, to constant weight, was dissolved in five times its weight of warm water. Two drops of phenolphthalein were added, and the solution titrated with normal hydrochloric acid. To the neutral solution, 1 drop of 10 per cent. ammonium hydroxid solution was added, and the mixture allowed to stand, with occasional stirring, for three and one-half hours at the temperature of 15 C. The precipitate was filtered on a weighed Gooch crucible, washed with just ten times the weight (of the original sample taken) of water (temperature 15 C.) and the precipitate dried at from 100 to 104. To the weight obtained, a correction factor (proved satisfactory by quantitative extraction experiments on the filtrate) of 0.13 gm. was added, for every 2 grams of the original sample taken.

The full details of the examination will be published in the 1914 Reports of the A. M. A. Chemical Laboratory. The results of the examination have been abstracted and are compiled in the accompanying table:

SUMMARY OF ANALYSIS

	Physical Appearance*	Gm. in 1-Ounce Bottle	Price, per Ounce	Moisture, Per Cent.	Alkalin. as NaOH on Dry Powder† Per Cent.	Theobrom. in Dry Powder† Per Cent.	Theobromin in Orig. Specimen† Per Cent.
Diuretin	3 Pure White	28.5	$1.75	0.01	10.44	48.61	48.61
Theo. Sod. Sal. M. C. W.	3 Pure White	27.5	0.35	1.89	9.95	46.11	45.24
Theo. Sod. Sal. Merck	1 Pure White	29.0	0.35	0.48	10.38	47.87	47.58
Theo. Sod. Sal. P. W. R. Co.	2 Pure White	29.1	0.35	2.46	10.30	47.57	46.39
Theo. Sod. Sal. Roche	3 Pink	28.6	0.35	2.27	9.92	49.05	47.92
Theo. Sod. Sal. Squibb	1 Pure White	26.8	0.45	0.39	9.97	46.82	46.63

* In this column, 1, 2 and 3 denote the following:
1. Quite crystalline, under microscope.
2. Fairly crystalline, under microscope.
3. Not crystalline, under microscope.

† Average of determinations.

While the results show some variation in the moisture content and also in the actual theobromin content of the dried specimens, the variation is unimportant. The products in their original state (undried), as compared in relation to the theobromin content (the highest percentage of theobromin being 48.61, the lowest 45.24), reveals a variation of only about 3 per cent.—a variation which is negligible in the case of drugs such as theobromin.

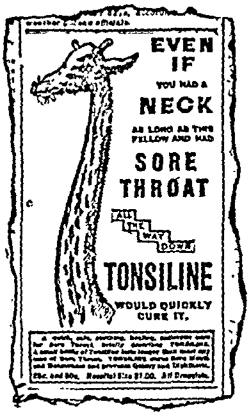
From the preceding investigation, it is concluded that (1) practically there is no difference between the non-proprietary brands of "theobromin sodium salicylate" and "Diuretin"; (2) the several specimens examined were not simple mixtures of "theobromin" and "sodium salicylate"; (3) essentially all the brands complied with the standards laid down and can be rated as satisfactory; (4) "Diuretin," though sold at an exorbitant price, is not superior to the product supplied under the descriptive term "theobromin sodium salicylate," and (5) "Diuretin" sells wholesale for $1.75 an ounce, against 35 cents for the "theobromin sodium salicylate," and therefore its employment cannot be interpreted otherwise than as a useless and unnecessary expense.

TONSILINE

If we are to believe the advertisements — which we are not —"Tonsiline quickly cures sore throat." No such untruth appears on the label of Tonsiline, for lying on the label is expensive nowadays.

> "We make no wild claims. We would be very sorry to make a single *statement not the exact truth.*"

This from the bottle. Yet we read in the newspapers — the veracity of whose statements is not subject to the jurisdiction of the Food and Drugs Act—that Tonsiline is:



> "A quick, safe, soothing, healing antiseptic cure for sore throat."
> "Tonsiline cures sore mouth and hoarseness."
> "Tonsiline prevents diphtheria."
> "Tonsiline is the one and only sore throat cure which is sold over a large part of the United States."

Tonsiline is sold by the Tonsiline Company, Canton, Ohio. To determine the nature of this "one and only sore throat cure which is sold over a large part of the United States," it was analyzed in the Association's laboratory. Here is what the chemist found:

CHEMIST'S REPORT

"Three original bottles of Tonsiline were purchased and the contents subjected to examination. The bottles contained a yellow liquid, with an odor resembling that of Tincture of Iron Chlorid, U. S. P., and having an astringent taste. The specific gravity was 1.0418 at 15.6 C. If the solution was cooled below 12 C. crystals of potassium chlorate were formed. Qualitatively the presence of the following was demonstrated: Iron (ferric), potassium, chlorate, chlorid and alcohol. The quantitative determinations gave the following:

Alcohol (by volume)	6.3 per cent.
Iron	0.37 per cent.
Potassium	1.31 per cent.

"From the iron and potassium contents it would be calculated that Tonsiline contains 1.60 per cent. ferric chlorid ($FeCl_3$) and 3.89 per cent. potassium chlorate ($KClO_3$). The amount of ferric chlorid administered in two teaspoonfuls, or 8 c.c., which is the dosage, is essentially the same as that administered in 1-2 c.c. of tincture of ferric chlorid U. S. P., and which is the official dose. In other words Tonsiline is 1/16 as strong as tincture ferric chlorid.

From the chemist's report it is evident that a product having essentially the same composition as Tonsiline would be:

Tincture of chlorid of iron (ferric chlorid), U. S. P.	1 ounce
Alcohol	1 ounce
Potassium chlorate	280 grains
Water, sufficient to make	1 pint

It is not necessary to tell physicians that Tonsiline never cured sore throat nor prevented diphtheria. The stuff contains drugs whose use for these purposes, by the medical profession, is being abandoned. It is the old story of exploiting the public by the use of discarded theories that have been revamped for commercial purposes. The risk of poisoning from the use of potassium chlorate, while well known to the medical profession, is still but little appreciated by the public. The dangers of the indiscriminate use of a "patent medicine" containing, as Tonsiline does, a saturated solution of chlorate of potash by individuals who may be suffering from kidney disease, will be evident to every physician, but not to the layman.

Summed up: Tonsiline is both inefficient and dangerous.

GOMENCL

A correspondent sends some advertising matter on Gomenol and calls attention to the number of diseases for which the preparation is recommended:

Gomenol is apparently a volatile oil. It is a proprietary said to come from France, and to be prepared from a species of cajuput (*Melaleuca viridiflora*, Gaertn.). This plant is closely related to the cajuput tree or swamp tea-tree (*Melaleuca leucodendron*, Linné) from which the official oil of cajuput is obtained. The oils from these two plants are very similar in composition and presumably in therapeutic properties. The oil of the first-named plant appears not to be marketed except in the form of the proprietary, Gomenol. It probably has no advantage over the official oil of cajuput while in the form of Gomenol it costs about four times as much. The following are some of the claims made for Gomenol in the advertising circulars. They need no comment.

"A real specific for suppurations and catarrh. . . . It immunizes tissues, excites their vitality and favors the formation of new cells. . . .

"The least trace of Gomenol prevents the growth *in vitro* of the streptococcus, the tuberculosis bacillus and the gonococcus."

Correspondence

Flexner's Book on "Prostitution in Europe."

To the Editor:—It is reasonable to presume that the medical aspect of the social hygiene movement will be dealt with, or at least directed by, the high-minded physicians of the world. As we realize the extreme prevalence of the venereal diseases and their serious consequences, the aspect of prevention is bound to force itself on our attention, just as it has in other contagious diseases. In spite of the fact that facilities for treatment of these diseases are absolutely inadequate, little is said about it, even in the medical press; and when we come to consider prostitution, which all admit is the cause of these diseases, few physicians have cared to express any opinion publicly. First, because most physicians, like most lay people, consider the present state of things an unavoidable evil, if an evil at all. Those doctors who have expressed opinions on the subject have generally taken the position that we ought to follow the policy of Continental Europe, namely, the policy of segregation, registration, examination and, if necessary, even temporary detention of infected prostitutes. Although all the vice reports of this country, based on exhaustive study, condemn segregation, the feeling still prevails that we have much to learn from European experience in dealing with prostitution and checking venereal diseases. As a matter of fact, some students of this problem have long been convinced that European methods and policies have by no means achieved the success with which they are often credited. They have doubted that regulation regulates, that examination has had any substantial effect in protecting the patrons of prostitution, or that the police are the proper agents to carry on the supervision and regulation deemed necessary. But they have been challenged so frequently by the adherents of the so-called European policy that it is fortunate that we have at last in the book of Abraham Flexner, "Prostitution in Europe," a clear, able and convincing exposition of the defects and vices of that system. It is a pleasure to recommend this work to every fair-minded physician who has been in the least disposed to favor regulation and examination. It is not too much to say that it ought radically to change current opinion in regard to the treatment of prostitution.

Among the things established by Mr. Flexner, those which challenge medical attention are chiefly these: The entire system of police inspection and regulation was originally instituted in the interest of public order and external decency; health or sanitation was not thought of. In other words, the system was established merely to prevent the offensive forms of the social evil from flaunting themselves in public places. To-day, however, this has admittedly become secondary or negligible, since public opinion and other forces are relied on, even in Europe, to secure external decency. Regulation and examination, as a health measure, or rather a preventive, was therefore an afterthought. The new system was engrafted on the former and it seemed easier to use the same machinery which already existed, even though it was wholly inadequate to handle the new phase of the matter.

As to the medical examination carried on in various parts of Europe which Mr. Flexner studied, we are not a little surprised to find that few of the great centers of medical learning are applying to these examinations of prostitutes the scientific methods with which we are in the habit of crediting them. In fact, in Paris, for instance, the most casual and perfunctory examinations are made, such as even we in this country would consider worthless. But even in those places, like Berlin, for instance, in which the examinations are carried on carefully and scientifically, the number of prostitutes examined and treated in the hospital provided for such treatment is so small in comparison with the large number of prostitutes in that city that the conclusion is inevitable that the examinations serve very little to diminish venereal disease. Mr. Flexner further concludes that we might just as well give up all attempt at regulation and examination, if the object be the safeguarding of public health.

He does insist, however, as we all do, that repression of prostitution, if carried on honestly and by competent agencies of the government, tends to diminish the supply. He is one of those who do not believe that in prostitution the supply follows the demand. On the contrary, he points out very clearly that *the demand is stimulated in various ways by the supply.*

As to positive suggestions made by Mr. Flexner, they are very similar to those which have been made in our splendid vice reports, namely, that to solve the problem of prostitution we need the aid of the intelligent, conscientious physician as well as that of the sociologist and economist.

Rachelle S. Yarros, M.D., Chicago.

"The Doctor Can Wait"

To the Editor:—The complaint of Dr. Schreiber (The Journal, Feb. 21, 1914, p. 633) of the lay point of view that John Doe's debt to the doctor can wait until other debts are paid is just; but Dr. Schreiber does not, to my mind, indicate how and in what direction that point of view is to be changed.

Practically all of us provide better for regular every-day items of expense, like store-bills and rent than for occasional or accidental demands; therefore, when John Doe is unfortunate, Dr. Smith is very apt to be the last creditor paid, if paid at all. Dr. Smith may, indeed, force his collections, or may refuse further service to John Doe, or, like Robin Hood, may even matters up by exacting heavier fees from wealthier patients; but the objections to either plan are, I think, perfectly obvious.

John Doe, a good citizen, doing his fair part in the world's work and rearing good citizens to continue that work, is fairly entitled to demand of society the due guarding of the family health. Dr. Smith has rendered honorable social service to one entitled to social protection and deserves proper recompense at the hands of society. Why, then, should not we Dr. Smiths combine to secure our due compensation from city, county or state instead of waiting, like our English confrères, to have new relations thrust on us, suffering meanwhile from an ever-increasing burden of uncollectable bills?

W. R. Tymms, M.D., Gig Harbor, Wash.

[Comment.—It was Salmon P. Chase, we believe, who coined or invented the startling axiom, "The way to resumption is to resume." The way for physicians to get paid for services rendered, in the same manner as others get paid for services rendered or for goods delivered, is to do as others do—get paid. Physicians are so in the habit of saying that the doctor's bill is always the last one to be paid that they have become accustomed to let the bill run, so that the situation has come to be considered the necessary condition of affairs. Nothing of the kind! There are doctors who present their bills, as do others in the community, and courteously but firmly demand that they be treated as are the others. In every such case the doctor's bill is paid as soon as any; and, above all—and this, we affirm, is a fact—the doctor who presents his bill and demands payment for his services is more respected than the man who is afraid to present his bill or to demand payment for fear the patient, or the individual responsible, may become angry and get some other doctor.—Ed.]

The Blister Treatment of Subacromial Bursitis

To the Editor:—Supplementary to the article on "Subacromial Bursitis" by L. W. Littig (The Journal, March 21, 1914, p. 907), I wish to call attention to the excellent results of blistering in this malady. In the first instance, there is a striking similarity, pathologically, between subacromial bursitis and tendosynovitis of the extensors at the wrist. Their frequency is about the same, and both are usually caused by the frictional trauma of overuse or by a direct vulnerating force. In the early stages of both I have practically invariably obtained magical relief by the application of a blister. A square inch of fabric "buttered" with ceratum cantharidis U. S. P., or an equal area of a "ready-to-use" plaster is moistened with olive-oil and applied over the inflamed part. It is covered with a dossil of gauze, which is secured by adhesive plaster. The text-books say to remove the blister in from four to six hours, but practically it works out that as soon as the blister has formed, the cushion of serum interposed between the medicament and the underlying dermis automatically inhibits vesication. For this reason I remove the blister the next day and dress with boric-acid ointment spread on surgical lint. Immobilization is now secured. It is astonishing how, in the case of the bursitis, painless abduction, and in the case of the tendosynovitis, crepitation-free tendon-play, rapidly returns. Of course, the bursitis must be properly diagnosed, and when available a roentgenogram should be taken to exclude minor skeletal injuries, for the condition is not always primary, but may be secondary too, for example, tear or arrachement fracture of the greater tuberosity of the humerus. I do not agree that there is liability of a laceration of the tendon of the supraspinatus muscle, but think that a shell of cortex is more often avulsed from the bone by this or one of the other two tendons that insert on this prominence. The blister acts not only by determining the congestion from the part, but also trophically through the cutaneous nerve which, in the case of the shoulder, is a branch of the same nerve that supplies the deltoid, the bursa and the joint—the circumflex. P. G. Skillern, Jr., M.D., Philadelphia.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RECIPROCITY UNDER THE NEW CALIFORNIA PRACTICE ACT

To the Editor:—Please give full particulars regarding the provision for reciprocity in the new California practice act.

P. C. N.

Answer.—Holders of certificates to practice medicine issued since Aug. 1, 1901, by a medical examining board or by any other board or officer authorized by law to issue a certificate entitling the holder thereof to practice medicine and surgery either in the District of Columbia or any state or territory in the United States, will be granted a certificate to practice medicine in the state of California on payment of a $50 fee, provided that the requirements of the medical college from which he graduated and the board which issued such certificate shall not have been in any degree or particular less than those required for issuance of a certificate in the state of California at that time. The applicant must furnish from the board which issued such certificate satisfactory evidence that the requirements of the college or board met the above-mentioned requirements of this state. Licentiates prior to Aug. 1, 1901, who have practiced medicine and surgery in any other state and who desire to register in this state, shall file application on a blank furnished by the board showing: (1) full name of the applicant; (2) all institutions in which he studied and the period of study, and all institutions at which he graduated; (3) statement of certificate or certificates to practice medicine and surgery which may have been issued to him, together with date and description of the same; (4) statement of all places in which applicant has practiced medicine or surgery, and (5) such other general information as to his past practice as may be required by the said board. The board shall then investigate and if acceptable shall afford him a practical, clinical, oral examination not less than six months subsequent to the date of application.

This is not really "reciprocity" but the endorsement of licenses issued by other state. Reciprocal relations with other states, therefore, are unnecessary.

AN UNSUITABLE PRESCRIPTION

To the Editor:—Please criticize the following prescription:

℞	Ac. hydrocyanic dil.	♏ xx
	Bismuthal	℥ ii
	Magnesiae lactis	℥ ii
	Aquae menthae piperitae	
	Elix. lactopeptin ....āā	℥ ii

M. S. 3i before meals. A. L. W.

Answer.—This is a typical example of what a prescription should not be; it is an evidence of lack of knowledge on the part of the prescriber as to what he is prescribing. It contains two proprietaries, one of which contains nine ingredients, and the other, six. Both are said to contain pepsin, hydrochloric acid and lactic acid. The mixture will do neither good nor harm.

In the treatment of diseases of the stomach the use of simple remedies designed to meet the most prominent indication is especially to be commended. In this case the various alkalies have other properties than that of antacids and each should be used only when indicated—to meet a special purpose. Thus, bismuth compounds would be suitable to hyperacidity accompanied by diarrhea, while magnesia is suitable to those cases characterized by constipation. In the prescription presented they would tend to neutralize each other so that the mixture could not well have been intended for a special case.

BOOKS AND PERIODICALS ON TUBERCULOSIS

To the Editor:—Please give a list of about twenty-five books that you can recommend for a library in a tuberculosis sanatorium for the use of the doctors in charge.

Rosa Hibbard, Kansas City, Mo.

Answer.—The following list is offered as a suggestion:

Tr. Nat. Assn. for the Study and Prevention of Tuberculosis, 1905 to date.
Beiträge zur Klinik der Tuberkulose. Würzburg, Curt Kabitzsch, 16 marks a year.
Cornet, G.: Tuberculosis and Acute General Miliary Tuberculosis (Nothnagel's Practice), Philadelphia, W. B. Saunders Company, $5.
Cheyne: Tuberculous Diseases of the Joints, New York, Oxford University Press, $5.50.
Klebs: Tuberculosis, New York, D. Appleton & Co., $6.
Bonny: Pulmonary Tuberculosis and Its Complications, Philadelphia, W. B. Saunders Company, $7.
Knopf: Tuberculosis a Preventable and Curable Disease, New York, Moffat, Yard & Co., $2.
Walters: Open Air or Sanatorium Treatment of Pulmonary Tuberculosis, New York, William Wood & Co., $2.25.
Hillier: Tuberculosis, Its Nature, Prevention and Treatment, New York, Cassell & Co., $1.25.
Hoffman: Mortality from Consumption in Dusty Trades (Labor Bulletins 79 and 82), U. S. Bureau of Labor, 1908, 1909.
Kelynack: Tuberculosis in Infancy and Childhood, New York, William Wood & Co., $4.
Ely: Joint Tuberculosis, New York, William Wood & Co., $2.50.
Burton-Fanning, F. W.: Open-Air Treatment, New York, Paul Hoeber, $1.50.
Maylard: Abdominal Tuberculosis, Philadelphia, P. Blakiston's Son & Co., $4.
Riviere and Morland: Tuberculin Treatment, New York, William Wood & Co., $3.
Thomson: Consumption in General Practice, New York, Oxford University Press, $4.50.
Hamman: Tuberculin in Diagnosis and Treatment, New York, D. Appleton & Co., $3.
Robin: Treatment of Tuberculosis, Philadelphia, P. Blakiston's Son & Co., $7.
Bandelier and Roepke: A Clinical System of Tuberculosis, New York, William Wood & Co., $6.
Bernhard, Oskar: Heliotherapie im Hochgebirge mit besonderer Berücksichtigung der Behandlung der chirurgischen Tuberkulose. Stuttgart, Enke, 1912.

Sahli: Sahli Tuberculin Treatment, Including a Discussion of the Nature and Action of Tuberculin and of Immunity to Tuberculosis, New York, William Wood & Co.
Carl Spengler: Tuberkulose und Syphilis—Arbeiten (1890-1911), Herausgegeben von seinen Schülern und Freunden, Davos, H. Erfurt, 1911.
König: Die spezielle Tuberkulose der Knochen und Gelenke auf Grund von Beobachtungen der Göttingen Klinik, Berlin, Hirschwald.
Bardswell: Diet in Tuberculosis, New York, Oxford University Press, $2.50.
Wilkinson: Treatment of Consumption, New York, The Macmillan Company, $3.
Wolff-Eisner: Ophthalmic and Cutaneous Diagnosis of Tuberculosis, New York, William Wood & Co., $2.75.
Lake: Laryngeal Phthisis, New York, William Wood & Co., $2.
Senn: Tuberculosis of the Bones and Joints, Philadelphia, F. A. Davis Company. $4.
Sabourin, C.: Traitement rationnel de la phthisie, Edition 4, Paris, Masson, 1913.
Petruschky: Grundriss der spezifischen Diagnostik und Therapie der Tuberkulose, Leipsic, Leinerweber, 1913.
Koch: Gesammelte Werke von Robert Koch unter Mitwirkung von Professor Gaffky und Professor Pfuhl, Leipsic, Thieme, 1912.
Tuberculosis Directory, National Association for Study and Prevention of Tuberculosis.
Tuberculosis Hospital and Sanatorium Construction, National Association for Study and Prevention of Tuberculosis, $1.50.
Tuberkulose-Arbeiten aus dem kaiserlichen Gesundheitsamte, Berlin, by Julius Springer.

SODIUM CITRATE IN INFANT-FEEDING

To the Editor:—Please discuss the use of sodium citrate to render delicate the cow's-milk clot in the stomachs of infants. I have not observed that the use of this drug in infant-feeding is well known or widely used. If prolonged use of the drug is harmless, then it should very much simplify infant-feeding, as milk modification would become a measure rather to meet the physical needs of the infant than to render milk more easily digestible. I am not specializing in infant-feeding, but in one case in which a child was given full rich cow's milk in 8-ounce quantities five times a day after six months' breast-feeding, it showed not the first indication of indigestion. This seems to me to be due rather to the sodium citrate, a grain to the ounce, which was added, than merely to an extraordinarily strong digestion. The few clots of cow's milk which were regurgitated were of the same consistency as those of the breast-milk. What are the chances of delayed calcification, rickets, or what not, as the result of using sodium citrate, say up to the end of the first year? J. S. L.

Answer.—Sodium citrate will render the curd of cow's milk more delicate. Practically the same result can be obtained by boiling the milk. If the question of feeding infants were merely the question of the casein content of milk, the addition of sodium citrate would be a very simple answer. Recent experiments have gone to prove (Benjamin's *Zeitschrift für Kinderheilkunde*, 1914, x) that the absorption of the protein of cow's milk is about as good whether the large curds occur or not, so that one cannot draw conclusions as to the effect of cow's milk on the child from the presence or absence of large curds in either the vomitus or the stool. The fact probably is that the large curd in either the vomitus or the stool represents rather a non-digestion than an indigestion. So far as we know, sodium citrate given over a long period has no effect on calcification, nor has it any tendency toward the production of rachitis.

ULRICH'S FORMULA

To the Editor:—In The Journal, Feb. 28, 1914, p. 686, in an article on albuminuria in life-insurance examinations, appears a method for preparing a test solution for albumin according to Ulrich's formula. In this "a saturated and filtered saline solution is acidulated to 2 per cent. acetic acid." Can you tell me how to accomplish this? H. C. J., M.B., Edmonton, Alta.

Answer.—A saturated solution is made by continued agitation of the solvent with a little more of the substance than will dissolve, or else by warming the solvent with an excess of the substance for some time and then cooling to the normal temperature under repeated agitation. Salt is only slightly more soluble in hot water than in cold, but if on cooling a precipitate separates, the solution should be filtered. To acidulate to 2 per cent. it is merely necessary to add 2 gm. or 2 c.c. of glacial acetic acid to 100 c.c. of salt solution. This is sufficiently accurate for clinical purposes.

STERILIZATION OF DRESSINGS

To the Editor:—Can gowns, sheets, gauze, etc., be satisfactorily sterilized in an ordinary double-walled Rochester steam sterilizer, and, if so, about what time is necessary to sterilize them properly? H. F. Kilbourn, M.D., Perrinton, Mich.

Answer.—Yes; such articles should be sterilized under 10 pounds' pressure for a period of one hour, or in a low-pressure sterilizer, such as the Rochester, for an hour and a half, allowing half an hour for the material to dry.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

THE PLACE OF MEDICAL MEN IN THE MODERN STATE

Some Interesting Facts from Mr. Lloyd-George

The place and influence of scientifically trained physicians in the modern state was interestingly discussed at a dinner recently given to Christopher Addison, M.D., F.R.C.S., M.P., chairman of the Board of Intermediate Medical Studies of the University of London, and reported at length in the *British Medical Journal.* At the dinner, Dr. Addison's health was proposed by Mr. Lloyd-George, chancellor of the exchequer, who discussed the value of physicians in politics and their influence in the House of Commons, of which Dr. Addison is a member.

THE NATIONAL INSURANCE ACT

Speaking of the national insurance act, with the drafting and passage of which he has been intimately identified, Mr. Lloyd-George said that it was estimated that there were 22,500 general practitioners in Great Britain, and that of these 20,000 were now on the panels, and assisting in the administration of this act. During the past year four and one-half million pounds ($22,500,000) had been paid to physicians for medical services under the act. This meant an average of £230 ($1,150) for each physician. This was in addition to the income derived from private practice. Mr. Lloyd-George stated that the figures secured so far showed an increase of from $750 to $1,000 per year in the average physician's income. This increased pay meant more work, but was also a very good thing from the point of view of the community, as it meant that millions of persons were now getting proper medical attention who previously had none at all. The general result was that the remuneration of the medical profession was increased. The act as it stands at present could be improved, amended and altered in the light of experience. The state was feeling a deeper sense of responsibility for the well-being of every individual. A general health survey of the British nation was now being taken, which would include families and individuals who have never before had proper care or attention. The hand of the state to-day, instead of being the hand of punishment, was a hand of mercy, which through the doctor, was going down to rescue many poor wretches from the conditions under which they live.

RESPONSE OF DR. ADDISON

Dr. Addison, in responding, said that a new phase was coming over public opinion. Ill health had always meant a great loss of both energy and treasure; but now that sickness could be expressed in the terms of so many thousands of pounds weekly and yearly, it appealed directly to the British pocket. The problem of public health had emerged from the general into the particular. It now arrested the attention of every citizen, and demanded well-considered scientific and practical effort, not only toward an earlier and more effective treatment of sickness, but also for increased prevention of its occurrence. There was need for more men in the medical profession than heretofore, as the demands for public service are greater.

In this connection, it was interesting to contrast the situation in England, where enough properly trained men cannot be secured to do the work that is needed, with the situation in Austria where, as already reported in The Journal,[1] the medical profession has issued a warning to the public that there are now in the medical schools of Austria as many students as the profession can absorb in the next six years.

Discussing the influence of physicians on legislation and administration, Dr. Addison said that their knowledge and experience would be of increasing value to the community. Public interest must always come first. It is a short-sighted and suicidal policy that seeks to promote the interest of any class at the expense of the general interest. The people would welcome any help and guidance that modern, scientific knowledge could afford. Discussing the present organization of the British public health service, Dr. Addison said that no one looking fairly into this question could fail to recognize the confusion that now existed. It was at present a medley of authorities with an enormous waste of effort. Two of the greatest items of expense were those connected with tuberculosis and the illness of old age. The large grants for tuberculosis made to county authorities would make it possible to remove tuberculosis gradually from the operation of the poor law, while the workings of the national insurance act, providing care for aged working people, would insure them proper attention. Even with these changes, however, the present situation regarding public health administration could clearly be simplified by establishing a common aim and direction for public health activities. The numerous inspectors, the overlapping boards and authorities and the conflicts of authority all increased the defects of public health administration without increasing its efficiency.

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[1] Warning against the Medical Career, Vienna Letter, The Journal A. M. A., March 21, 1914, p. 947.

POSSIBILITIES OF THE FUTURE

Looking into the future Dr. Addison said that when discussing possible developments, certain elementary facts must be kept in mind, which no government can possibly ignore. Any service, in order to be satisfactory, must be one that will attract and keep an adequate number of capable men, that in its operations contains incentives to, facilities for, and encouragement of, increased efficiency, and that makes use of that intimate personal relation and trust which must exist between physicians and their patients. It might be of great value if arrangements could be made for medical men to work in groups, where they might combine for mutual help and have access to better means and facilities for work. The great question of providing adequate hospital accommodations for the sick of the nation is one which must be solved in the future. The most important function of the medical profession, however, Dr. Addison conceived to be the use of all the power of medical organization, all the knowledge and all the art and science of medicine toward an increased prevention of disease. The duty of physicians is clear. The duty of the state must be equally clear. Dr. Addison's statement on this point is worth quoting in full:

> "The state, however, has no right to ask any class of men to do the impossible. It confronts the medical profession with six hundred thousand ill-nourished children in our elementary schools, with three hundred thousand who have adenoids and so forth; it deplores the waste of infant life; it points to an army of factory girls and women workers with anemia, chronic indigestion, etc., and it is beginning to say to the medical profession, 'We want these things altered. We want these people to be healthier. Will you help us to treat them?' It would be invaluable if the medical profession after fair, complete and organized consideration, but in a full and fearless manner, were to say to the state:
>
> "'Yes! we will turn to the task with all good will and do the best we can, but we cannot undertake to make these children healthy by drugs. They need good food, fresh air, a clean and well-ventilated home. So long as these things are absent, so long as many of these children, with too little sleep, pass half their hours in the stuffy, stagnant air of an overcrowded room, so long will they crowd into our clinics and outpatient departments.'
>
> "I hope also that they will add: 'We claim also that those whose duty it is to make reports on the conditions of labor and home life of the people should be free to tell the truth, and the whole truth, without fear or favor. These anemic girls, these dyspeptic women, are not to be put right by medicines alone. The hours they work, the conditions they work under, are often also concerned, as well as their habits of life and diet. It is useless for us to tell people to take proper food who have not the means of obtaining it, who sometimes are ignorant of how to cook it when they get it, and who often enough are paying what should be an economic rent for a decent home but are obtaining only tenement quarters without any facilities for decent life. It is the duty of the state to use its schools and other agencies to the full and give to the people a knowledge of these matters, of an appreciation of the value and meaning of cleanliness and temperance, and of other things which are of so grave importance in their daily life.' There is no limit to the usefulness of a proper and enlightened cooperation between the medical profession and the state, and its influence would be felt in every department of national life."

In conclusion, Dr. Addison said:

"The community has a growing need for the services of medical men in the wider sphere to which I have referred. There is a place for them there in which their help and influence as citizens and as trained men should be felt, in the education and preservation of healthy and clean-living people, in the molding of our laws, in the administration of them, and throughout the whole organism of society. This is a place they well may occupy, and in doing so in a public and collective as well as in a private and individual capacity, they become trusted counselors and honored servants of the commonwealth."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7. Sec., Dr. John Wix Thomas, Phoenix.

ARKANSAS: *Little Rock, May 12.* Sec., Dr. W. S. Stewart, Suite 404 Citizens Bk. Bldg., Pine Bluff. Homeopathic: Little Rock, May 12. Sec., Dr. I. J. Brooks, 219 East 10th St., Little Rock. Eclectic: Little Rock, May 12. Sec., Dr. C. E. Laws, Ft. Smith.

CANADA: Alberta, April 24. Dr. Cecil E. Race, Registrar of the University of Alberta, Edmonton.

COLORADO: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

IDAHO: Wallace, April 7. Sec., Dr. John F. Schmershall, Jerome.

ILLINOIS: Coliseum Annex, Chicago, May 12-14. Sec., Mr. Amos Sawyer, Springfield.

LOUISIANA: New Orleans, May 4. Homeopathic Board, Sec., Dr. Edward Harper, 702 Macheca Bldg., New Orleans.

MINNESOTA: Minneapolis, April 7-10. Sec., Dr. Thomas McDavitt, 814 Lowry Bldg., St. Paul.

MONTANA: Helena, April 7. Sec., Dr. Wm. C. Riddell, Helena.

NEVADA: Carson City, May 4. Sec., Dr. Simeon L. Lee, Carson.

NEW MEXICO: Santa Fe, April 13. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, April 14. Sec., Dr. John W. Duke, Guthrie.

PROVINCE OF ALBERTA: April 24. Dr. Cecil E. Race, Registrar of University of Alberta, Edmonton.

TENNESSEE: Memphis, Nashville and Knoxville, first week in May. Sec., Dr. A. B. DeLoach, Memphis.

UTAH: Salt Lake City, April 6-7. Sec., Dr. G. F. Harding, 403 Templeton Bldg., Salt Lake City.

WEST VIRGINIA: Charleston, April 21. Sec., Dr. S. L. Jepson, 81-12th St., Wheeling.

South Dakota January Report

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the written and practical examination held at Pierre, Jan. 13-14, 1914. The number of subjects examined in was 13; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 10, of whom 7 passed and 3 failed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1899)	85.1
Bennett Medical College	(1913)	85.7
Rush Medical College	(1887)	84.2
University of Illinois	(1912)	80.7
Iowa Medical College	(1886)	83.5
University of City of New York, Med. Dept.	(1894)	84.6
University of Virginia	(1909)	87.1
FAILED		
Atlanta College of Physicians and Surgeons	(1909)	73.9
Bennett Medical College	(1913)	73.9
American Medical College, St. Louis	(1912)	73

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity *with*
Rush Medical College	(1897)	Minnesota
Kentucky University	(1904)	Nebraska

University of Louisville	(1909)	N. Dakota
Cotner Medical College	(1904)	Nebraska
University of Nebraska	(1909)	Nebraska

The following questions were asked:

CHEMISTRY

1. What use has a physician for knowledge of chemistry? 2. Name ten elements, giving valence and atomic weight. 3. Give chemical name, common name, physical appearance and common use of: (*a*) $MgSO_4$, 7 H_2O; (*b*) Na_2CO_3, 10 H_2O; (*c*) $CH.Cl_3$; (*d*) C_2H_2; (*e*) H_3BO_3. 4. Give chemical name, formula, physical appearance and common use of · (*a*) sal ammoniac; (*b*) saleratus; (*c*) calomel; (*d*) corrosive sublimate; (*e*) lunar caustic. 5. What is glycerin? How is it produced? 6. On what chemical substances do hardness of water usually depend? What would you use to soften water? How does that do it? 7. Boil acid urine; if a cloud or precipitate appears, what substances may the cloud or precipitate be? How determine which it is? 8. (*a*) Describe your favorite test for sugar in urine. What are its fallacies? (*b*) Name all the ingredients of your reagent. (*c*) What color change takes place? (*d*) What is the chemical reason for the color change? 9. Give a test for copper in canned vegetables. 10. Is there chemical or pharmaceutical incompatibility in the following prescription? Where is it and why?

℞	Strychninae sulphatis	gr. ss(½)
	Ammonii chloride	ʒ i
	Ammonii carbonatis	ʒ i
	Aquae purae	℥ i
	Syrupus pini strobi comp. q. s. ad.	℥ iv

Misce.

PHYSIOLOGY

1. What is lymph and how formed? 2. What is circulation of the blood? Follow it from and until it returns to the heart. 3. What is the object of circulation? Describe the changes that take place in the blood as it passes through the body. 4. Describe digestion in the mouth and stomach. 5. What is respiration and what causes it? 6. What are the enzymes? Give their chemical composition. 7. Describe intestinal digestion. What juices enter into it? 8. Name the excretory organs. What do they excrete? 9. Name the ductless glands. What are their specific office in the human economy? 10. How is heat produced and how maintained in the human body?

EMBRYOLOGY, HISTOLOGY AND ANATOMY

1. Describe the maturing and fecundation of the ovum. 2. From what embryonic layer does the respiratory tract develop? What other structures are developed from the same layer? 3. Describe microscopic difference in appearance of heart-muscle and skeletal muscle. 4. Describe microscopically superficial cells lining trachea. 5. Describe the patella. What is its function and how does it functionate? 6. Describe the shoulder-joint. 7. Name the muscles participating in tranquil respiration. 8. Give the blood-supply of the stomach. 9. Give origin and distribution of trifacial nerve. 10. Draw and describe the dorsal surface of the tongue.

PATHOLOGY

1. What is the cause of death following burns? 2. What is thrombosis? Describe the manner of its formation. Where are emboli most frequently found? Of what do emboli most frequently consist? 3. What general pathologic lesion characterizes chronic alcoholism? 4. What is ischemic paralysis? 5. State the result of stenosis of the tricuspid valves of the heart. 6. Carcinoma of stomach: Is it usually primary or secondary to carcinoma elsewhere? Where is it usually situated? Give most common type. 7. What conditions may cause dropsical effusion in the abdomen and in the lower extremities? 8. What diseases of the mother may be transmitted to the fetus? 9. Explain the process occurring in necrosis of bone. Give the pathologic condition characteristic of necrosis and caries of bone. 10. What determines the benign or malignant nature of a new growth?

BACTERIOLOGY

1. What is the cause of difference in the virulence of diphtheria? 2. What pathogenic conditions may be produced by the colon bacillus? 3. What is tuberculin? How is it produced? What is it used for? 4. Describe in detail the bacterial findings in puerperal septicemia. 5. How does the tetanus bacillus induce its effect? On what theory is tetanus antitoxin administered?

SKIN AND GENITO-URINARY

1. Diagnose secondary syphilis and outline treatment. 2. Give causes and treatment of orchitis. 3. Give etiology, diagnosis and treatment for urticaria. 4. Give symptoms, diagnosis and treatment of urethral stricture. 5. Give etiology, diagnosis and treatment of erysipelas.

EYE, EAR, NOSE AND THROAT

1. Treat a case of severe corneal ulcer. 2. Describe and give treatment for dacryocystitis. 3. What do you understand by the following: hypopyon, Argyll Robertson pupil, mydriasis, presbyopia, ptosis? 4. What would be your treatment for penetrating wound of the cornea? 5. Give four common symptoms caused by nasal obstruction. 6. Give symptoms and treatment for hypertrophied turbinate. 7 Treat a case of chronic otitis media. 8. Describe the eustachian tube, giving anatomy and function. 9. Give your method of differentiation between middle and internal ear disease. 10. Give three common causes for deafness and treat a given case.

OBSTETRICS

1. Conduct a case of normal labor. 2. Would you use chloroform in labor? If so, why? If not, why? 3. What is meant by puberty? What is meant by nubility? What is meant by menstruation? At what age in this climate do these begin? 4. How many, and describe briefly the different circulations during fetal development and immediately after birth. 5. Give the usual length of time in normal gestation. Give maximum and minimum length of time. 6. Give positive signs of pregnancy. 7. What is placenta praevia, and how would you manage a case? 8. Give indication for the use of forceps. 9. Give indication for version, and how would you proceed to accomplish it? 10. Give cause for post-partum hemorrhage and how would you manage the same?

GYNECOLOGY

1. What advice about bathing, sponging and exercise during normal menstruation would you give to a healthy young woman accustomed to warm tub-bath twice per week, cold sponging every morning and 2 miles' brisk walk daily? Why? 2. Give all causes of uterine hemorrhage. 3. Diagnose, treat and prognose chronic gonorrhea. 4. Diagnose, treat and prognose chronic leukorrhea. 5. Name all probable ailments and treat the most probable one: A patient, unmarried, aged 16, 5 feet 2 inches, 125 pounds, erect, pale, walks into your office at 4 p. m. Temperature 98.6, pulse 100, respiration 20, mucous membranes pale, teeth bad, complains of having missed two menses, always regular before, sharp pain and tenderness 2 inches below ensiform process, constant for three weeks, worse at 4 p. m. daily, better after eating. Pain in lumbar, sacral, uterine and ovarian regions; no discharge. Dyspnea on exercising; no heart-murmurs; constipated as a rule, sometimes blood in stools. Nausea in morning and when pain is bad, vomits almost daily, some days several times. Mother was sick in same way at same age for two years. Tired all the time.

SURGERY

1. A man is brought into your office with both lower limbs crushed off, having fallen under a passing engine; he is in full shock, has lost considerable blood and is almost pulseless. What would be your immediate treatment? 2. Called to attend a patient who is suffering from a troublesome epistaxis. Describe the method you would pursue to check it. 3. How would you treat a perforating gunshot wound of the abdomen? 4. Describe a Colles' fracture and give your treatment for same. 5. How would you manage a case of empyema? 6. Give the technic of an operation for the cure of a mastoid abscess. 7. Give the technic of taxis in inguinal hernia. 8. Describe the operation for strangulated hernia. 9. Describe a proper method of amputating the hip-joint. 10. Under what circumstances would you consider circumcision a proper procedure?

REGULAR THERAPEUTICS AND PRACTICE

1. Define hyperchlorhydria. Give the causes, symptoms, diagnosis and treatment. 2. If summoned to a middle-aged person discovered in a comatose condition, explain how to recognize on what disease the condition depends, and give treatment for the uremic type of coma 3. Differentiate between pyelitis and cystitis. 4. What are the four characteristic symptoms of exophthalmic goiter? Give the supposed etiology. 5. Differentiate catarrhal from croupous pneumonia. 6. On what symptoms would you base a diagnosis of typhoid fever? 7. How should acute nephritis accompanying or following scarlet fever be treated? 8. Name four diseases contraindications for general anesthesia, and state which of the four named you would consider the most important. 9. In the treatment of syphilitic node or gumma, state which should be used, a mercurial or an iodid, and give the reason therefor. 10. Describe the treatment of a case of diphtheria.

HYGIENE AND SANITARY SCIENCE

1. How would you fumigate a residence containing approximately 10,000 cubic feet of space? Name materials employed and amount of each. 2. Describe how sewage is purified in sedimentation tanks. 3. Describe the life-cycle of the common house-fly. 4. Instruct briefly a patient suffering from pulmonary tuberculosis as to the precautions he should adopt to avoid the spread of the disease. 5. Instruct briefly your nurse attending a case of diphtheria.

MEDICAL JURISPRUDENCE

1. A, attending a confinement case, finds it necessary to use instruments and calls B to administer the anesthetic. A does not sterilize the instruments and the patient becomes infected and brings suit to recover damages. Does B share the responsibility with A? 2. A, in performing a laparotomy, relies on B, a trained nurse, to pack the abdominal cavity with sponges. B also removes the sponges, but in so doing one is overlooked. Who is liable: A, the surgeon, or B, the nurse? 3. If in your practice you are called to treat an injured wrist, said injury according to your judgment is a severe sprain and you treat it accordingly, using reasonable care and skill. Later the patient calls another surgeon who discovers the injury to be a fracture. Would you be guilty of malpractice? 4. Can an unauthorized or unlicensed physician maintain an action for libel or slander against one who charges him with misconduct or incapacity in the discharge of his professional duties? 5. Would a physician be liable who takes an unprofessional, unmarried man with him to attend a case of confinement when there is no emergency requiring his presence?

HOMEOPATHIC THERAPEUTICS AND PRACTICE

1. What is the chief sphere of action of belladonna? Give characteristic indications for its use. 2. Differentiate diphtheria and follicular tonsillitis. Give two remedies for each, with indications for their use. 3. Name one remedy, with indications for its use, in each stage of pneumonia. 4. Name and give indications for two principal remedies in acute gastritis. 5. Give differential diagnosis between uremia, alcoholic coma and cerebral hemorrhage. 6. Outline your treatment for eclampsia, giving dose and potency of remedies used. 7. Name three diseased conditions in which you would prescribe arsenicum, giving symptoms fully. 8. Give indications for podophyllum in diarrhea. 9. Give symptoms and treatment of gastric ulcer. 10. Outline your treatment for cholera infantum.

ECLECTIC MATERIA MEDICA, THERAPEUTICS AND PRACTICE

1. Give differential diagnosis between small-pox, varicella, measles and scarlet fever. Treat a case of small-pox. 2. What is Bright's disease? What is diabetes? Differentiate between them and give treatment. 3. Diagnose and give treatment for typhoid fever. Should hemorrhage occur, how would you control it? 4. Give specific indications and dose for veratrum, rhus tox, podophyllum, macrotys and cactus grand. 5. Give differential diagnosis between tonsillitis and diphtheria. Treat a case of diphtheria. 6. What is ulcerative stomatitis? Give cause and treatment. 7. What is diaphoresis? Give three diaphoretics and dose of each. 8. What is a sedative? What is a stimulant? Name three of each. 9. Name three cardiac and three nerve stimulants. Give dose of each. 10. How would you treat a case of poisoning by arsenic, morphin, phenol (carbolic acid)?

Book Notices

Hygiene for Girls, Individual and Community. By Florence Harvey Richards, M.D., Medical Director William Penn High School. Cloth. Price, 75 cents. Pp. 257, with illustrations. Boston: D. C. Heath and Company, 1913.

The author's experience as a teacher of hygiene in a girls' school has enabled her to write a fairly practical book. The language is clear and concise, and few technical terms are used. There are one or two things, however, which should be changed or omitted in future editions. While patent medicines and habit-forming drugs are condemned, it seems unwise to state the names of such drugs, even though the sequels of their use are given as follows: "Opium, chloral and the bromids deaden pain and produce sleep, but they do so at the expense of the nervous system, the nerves of which they deaden." And further on (page 208): "Hasheesh is the juice of the Indian hemp, or *Cannabis indica*. It produces a happy delirium with visions of beautiful scenes and persons. . . . Cocain taken internally causes a pleasant excitement." After reading such a statement a girl of immature mind or weak will might decide that she would like to experience these sensations and risk the after-effects. On page 41 it is stated that "gray hair may come suddenly from fright, joy or grief, though such cases are much more rare than we are commonly led to believe." So far as authenticated cases are concerned, such an occurrence is not only rare but unknown and a statement like that quoted should not find a place in a book that assumes to speak with authority.

Practical Pathology, Including Morbid Anatomy and Post-Mortem Technic. By James Miller, M.D., D.Sc., F.R.C.P.E., Lecturer on Pathology and Bacteriology, School of Medicine of the Royal College, Edinburgh. Cloth. Price, 7 shillings, 6 pence. Pp. 395, with 109 illustrations. London: Adam and Charles Black, 1914.

The author states that it was his aim to supply in handy form the information required for practical work in relation to pathology. In this he has succeeded; short descriptions are given of the appearances in the more common morbid processes encountered in organs and tissues; at the same time these are correlated with the changes in the other organs and tissues of the body in the various diseases. The main points in the microscopic appearances are also given briefly, for the purpose, evidently, of reminding the student what to look for when he is examining his slides. In dealing with post-mortem technic and microscopic technic, the author gives one reliable method in each case. Hence the book is for the beginner and not the specialist. The medicolegal aspects of post-mortem work are also discussed. The general arrangement of the book is the same as that of other text-books. A departure from custom, however, is the binding of the illustrations together in the form of an atlas at the end of the book following the index.

Lehrbuch der Nervenkrankheiten für Studierende und Praktische Aerzte in 30 Vorlesungen. Von Robert Bing, Dozent für Nervenheilkunde an der Universität Basel. Paper. Price, $4.75. Pp. 606, with 111 illustrations. New York: Rebman Company, 1913.

The author, one of the most lucid writers in medical literature, discusses the entire subject of nervous diseases in thirty lectures. Writing for medical students and practitioners, he groups his material according to etiologic and physiopathologic values and not in conformity with the customary topographic and anatomicopathologic divisions. For instance, under syphilogenous diseases of the nervous system he not only describes cerebrospinal syphilis and syphilogenous combined system diseases, but also general paresis and tabes dorsalis. The chapter on dysglandular symptom-complexes embraces the lecture on myxedema, insufficiency of the adrenals and Addison's disease, acromegaly, dyspituitarism and dyspinealism. The lectures are concise and contain everything of importance, not omitting treatment. The therapeutic directions are sound and up to date in every respect. This book can safely be recommended to physicians and students as a most readable short German text-book on nervous diseases.

Bibliography of the Education and Care of Crippled Children. A Manual and Guide to the Literature Relating to Cripples, Together with an Analytical Index. By Douglas C. McMurtrie. Cloth. Price, $2. Pp. 90. New York: Douglas C. McMurtrie, 208 Metropolitan Tower, 1913.

As a justification for the compilation of this book, McMurtrie describes the dearth of references to books and papers on the care and treatment of crippled children in the catalogs in many of the libraries which he consulted. This was a matter of surprise also to the various librarians, who had not realized the meagerness of their lists on this subject. By dint of considerable hard work, much corresponding and considerable time, however, McMurtrie succeeded in gathering about 725 references, and they are set forth in alphabetical order and also in the form of an analytic index by which different phases of the subject of crippled children may be looked up. This book will be of great value to those persons taking a commendable interest in these handicapped members of society.

Lectures on Tuberculosis to Nurses. Based on a Course Delivered to the Queen Victoria Jubilee Nurses. By Olliver Bruce, M.R.C.S., L.R.C.P., Joint Tuberculosis Officer, County of Essex. Cloth. Price, $1 net. Pp. 134. New York: Paul B. Hoeber, 1913.

This little book goes over the field of tuberculosis in an interesting way, but it would almost seem as if the author had lost sight of his audience. Nurses are destined, in his opinion to fulfil important functions in the campaign against tuberculosis. Whether they will find use for the pathology and therapeutics contained in the author's lectures is somewhat doubtful. The opsonic index, methods of diagnosis, and tuberculin and sanatorium treatment are discussed at considerable length. The author considers that ordinary sanatorium treatment is an antiquated method compared with the method of graduated labor. In regard to drug treatment he is commendably conservative. He rejects iodin, cod-liver oil and creosote. Directions for the use of tuberculin are given with considerable detail.

A Text-Book of Biology. For Students in Medical, Technical and General Courses. By William Martin Smallwood, Ph.D., Professor of Comparative Anatomy in the Liberal Arts College of Syracuse University. Cloth. Price $2.75 net. Pp. 285 with 256 illustrations. Philadelphia: Lea & Febiger, 1913.

This book is well adapted to the purpose for which it was written—to be an aid to the student who is somewhat familiar with laboratory methods. The author has kept the needs of the student constantly in mind and so has produced a book which, while thoroughly scientific, may yet be read with pleasure. The chapters on embryology and the biology of cells are so clearly written that they furnish a valuable aid to the understanding of the complex process of fertilization. The book is marred here and there by bad proof-reading and slipshod English, but will be a distinct addition to any student's library.

Fortschritte der Naturwissenschaftlichen Forschung. Herausgegeben von Prof. Dr. Emil Abderhalden, Direktor des Physiologischen Institutes der Universität Halle a.S. Ninth Volume. Paper. Price, 15 marks. Pp. 280, with 104 illustrations. Berlin. Urban & Schwarzenberg, 1913.

Among the several articles of interest to the educated reader there is one of especial importance to the medical man, namely, the study on the "Importance of the Thymus in the Human Organism," by Dr. Arno E. Lampé. The article is practically a monograph on this subject, well written and richly illustrated, with an extensive bibliography at the end. An interesting biologic study is the lengthy article on the mode of the housing of fresh-water insects, by Dr. C. Wesenberg.

American Red Cross Text-Book on Elementary Hygiene and Home Care of the Sick. By Jane A. Delano, R.N., Chairman of the National Committee, Red Cross Nursing Service, and Isabel McIsaac, R.N., Member of the National Committee Red Cross Nursing Service. Prepared for and Indorsed by the American Red Cross. Cloth. Price, $1. Pp. 256, with 17 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

This is a practical little book containing much good common sense. Home nurses should find it particularly useful, and it might be used as a reference book in any home.

Miscellany

Water-Supply of Ships on the Great Lakes

An investigation by the U. S. Public Health Service of the water-supply of ships on the Great Lakes indicates that there is room for great improvement in the quality of water supplied on these vessels. In an investigation of three vessels during the summer of 1913, among 750 persons there were over 300 cases of diarrheal disease and fifty-two cases of typhoid fever with seven deaths which could reasonably be attributed to defective water-supply on these vessels. This would indicate that typhoid and diarrhea among the passengers and crews of the entire shipping of the lakes must amount to large figures, as few of the vessels have proper equipment or methods for providing a pure water-supply. Not only is the water polluted from the habit of vessels of discharging all wastes immediately into the lakes in the main lanes of travel, but the discharge of sewage into the lakes by the large cities and towns on their banks affords a still greater source of contamination, as care is not always exercised to fill tanks outside of harbors. In 1907 it is stated that seventy-seven cases of typhoid followed a short cruise of one of the lake vessels, traced to impure drinking-water taken from the Detroit River. The water-supplies of cities along the lakes is also said to be contaminated at times by vessels discharging sewage too near to water intakes. H. De Valin, who reports on the water-supplies of ships in *Public Health Reports*, Feb. 13, 1913, says that ship-owners should pay more attention to the equipment of their vessels in order to insure safe water-supplies. Filtering will not answer the purpose as it cannot be depended on for complete removal of harmful bacteria. Apparatus for distilling or sterilizing the water should be provided. Raw water of safe quality may be obtained from the municipal supplies of some cities along the lakes, and in some instances water is taken from this source by boats while lying in the harbors. Chicago now requires that vessels using that port must instal carrying devices so that sewage shall not be discharged within a certain distance of water intakes, or while in the harbor.

Rocky Mountain Spotted Fever in Montana

The investigation of this disease in Montana was continued during 1913 by Surgeon L. D. Fricks of the Public Health Service, in connection with the state health authorities of Montana, who were granted an appropriation by the legislature for that purpose. Dr. Fricks succeeded Dr. T. B. McClintic of the Public Health Service, who became infected and died during 1912 while carrying on investigations in the Bitter Root Valley. In *Public Health Reports*, Feb. 20, 1914, Fricks gives an account of the efforts to rid the most heavily tick-infested areas of the ticks by dipping the domestic animals, killing off the small wild animals and pasturing certain areas with sheep. The latter expedient was in continuation of an experiment begun in 1912 with a small band of sheep. It was found that ticks on sheep usually died before becoming engorged and fertilized, and while the experiment of 1913 was not conclusive, yet it was found in tick surveys in various parts of the valley in 1913 that areas pastured by sheep contained no ticks, while in areas pastured by cattle ticks were fairly abundant. On cultivated land practically no ticks were found on the west side of the Bitter Root Valley, extending up to the foothills; then there was a zone of heavy tick infestation along the hills where horses and cattle were pastured. Above the range of the domestic animals there was a zone of moderate infestation, and above this an area called the goat country, on account of roaming herds of Rocky Mountain goats, infested with ticks estimated at millions per square mile. The presence of these infested areas just beyond the zone of cultivated or pastured land increases the difficulty of permanent tick eradication, and Fricks says that some method of protection must be provided or buffers interposed against the introduction from above of ticks of wild animals, a comparatively high percentage of which are known to be infected, before there can be any lasting protection against spotted fever. The article includes brief reports concerning Rocky Mountain spotted fever in California, Oregon, Washington and the other Rocky Mountain states in which this disease is found.

A System of Stethoscopic Abbreviations

Professor Saugmann of Vejlefjord has proposed a list of abbreviations to be used in reporting stethoscopic findings. It was adopted by the conference at the eleventh meeting of the International Antituberculosis Association in Berlin, October, 1913. We print it together with the Latin, German, French and English words which the abbreviations represent:

d.	dexter	rechts	droit	right
s.	sinister	links	gauche	left
a.	anterior	vorne	antérieur	anterior
p.	posterior	hinten	postérieur	posterior
sup.	superior	oben	supérieur	superior
inf.	inferior	unten	inférieur	inferior
C.	costa	Rippe	côte	rib
C_2 etc.	costa II etc.			
interc.	spatium intercostale	Zwischenrippenraum	espace intercostal	intercostal space
Cl.	clavicula	Schlüsselbein	clavicule	clavicle
Pap.	papillula mammæ	Papille	mamelon	nipple
Sp.	spina scapulæ	Schultergräte	épine de l'omoplate	spine of scapula
Ang.	angulus scapulæ	Schulterblattwinkel	angle de l'omoplate	angle of scapula
½ Sc.	medio scapulæ	Mitte der Reg. infraspinata	au milieu de la région sousépineuse	middle of infraspinous region of scapula
– –	usque ad	bis zu	jusqu'à	up to
Th.	Thorax			
applan.	applanatus	abgeflacht	aplati	flattened
dilat.	dilatatus	ausgedehnt	dilaté	dilated
retard.	retardatus	nachschleppend	retardant	slowed
Margo	margo pulmonis	Lungenrand	limite du poumon	lung border
mobil.	mobilis	beweglich	mobile	movable
immobil.	immobilis	unbeweglich	immobile	immovable
M.*	mutito, mutus	Dämpfung	matité	dulness
Tymp.	tympanismus	Tympanic	tympanisme	tympanitic sound
Met.	metallia	Metallklang	résonnance metallique	metallic sound
Resp.	respiratio	Atmung	respiration	respiration
Insp.	inspiratio	Einatmung	inspiration	inspiration
Exsp.	expiratio	Ausatmung	exspiration	expiration
ves.	vesicularis	vesikulär		
bronch.	bronchialis	bronchial	souffle bronchique	bronchial
amph.	amphoricus	amphorisch	souffle cavitaire	amphoric
sacc.	saccatus	saccadiert	saccadé	cog-wheel
prolong.	prolongatus	verlängert	prolongé	prolonged
forte	fortis	verschärft	exagéré	strong
dim.	diminutus	abgeschwächt	affaibli, diminué	diminished
RL†		grossblasiges Rasseln	gros râles	coarse râles
Rl†		mittelblasiges-Rasseln	râles moyens	moderate râles medium râles
rl†		kleinblasiges Rasseln	râles fins	fine râles
( )		nur nach Husten zu hören	après la toux seulement	only after coughing
(Rl_1)		spärliches mittelblasiges Rasseln, nur nach Husten zu hören, etc.	râles peu nombreux moyens, perceptibles seulement après la toux etc.	few medium râles only after coughing
sicc.	siccus	trocken	sec	dry (râles)
cons.	consonans	klingend	consonnant	tinkling
crep.	crepitans	crepitierend	crépitant	crepitant
subcrep.	subcrepitans	subcrepitierend	souscrépitant	subcrepitant
craq.		knackend	craquements	crackling
rh.	rhonchi	Rhonchi	râles	rhonchi
frict.	frictio	Reiben	frottements	friction
Frem.	fremitus vocalis	Stimmfremitus	vibrations vocales	vocal fremitus
Brph.	bronchophonia			

* All quantitative variations of phenomenon are indicated by the figures 1 to 3 added to the principal sign, the number 1 to represent the minimum degree and the number 3 the maximum of the said phenomenon. For example, M_1, M_2, M_3 signify slight dulness, marked dulness, and complete dulness; Rl_1, Rl_2, Rl_3—few râles, several râles, and many râles, and so forth.

† Note the meaning of the capital and small letters.

The Causes of Fatigue

Dr. William Stirling, professor of physiology in the University of Manchester, recently delivered an address on "Health, Fatigue and Repose." Most of the breakdowns in man's life were due to himself, because of ignorance, recklessness, or both. Overwork, without sufficient repair of an organ, whether brain or eye, digestive organs or muscles was the primary cause of fatigue. All the organs of the body could not run at full speed at the same time. Mental fatigue greatly impaired bodily activity, and physical or muscular fatigue had a distinct effect on brain activity. The observations of Dr. Leonard Hill on the effects of a liberal supply of oxygen in fatigue were most important. Somnolence in churches and chapels seemed on occasion to occur at sermon-time, but it was not in all cases to be attributed to the sermon. The explanation lay rather in the badly ventilated atmosphere, and in the fact that Sunday, though the first day of the week, was to most church-goers the close of the week. The fatigue problem was all important to both the teacher and the child at school. It was well known that certain school subjects produced fatigue sooner than others. The following represented the order of subjects arranged according to difficulty: mathematics (standard), 100; Latin, 91; Greek, 90; gymnastics, 90; history and geography, 85; French and German, 82; natural history, 80, and drawing and religion, each 77. The energy of our nerve-cells and our muscles exhibited rhythmic variations in the course of the day. In each case they were most energetic between 10 and 11 in the morning, and these periods should be selected for the lesson that was apt to cause most brain fatigue. As to the causes of fatigue, the view that the chemical substances in the muscle or in the blood were used up more rapidly than they were replaced was substantially true. That muscular fatigue was partly a chemical process was shown by the fact that if an extract were made from the muscles of an animal that had been fatigued and injected into the muscles of a fresh animal, the muscles of the fresh animal showed phenomena which could not be distinguished from those of fatigue. If the blood-vessels of a fatigued muscle were washed with oxygenated water containing a little common salt—a liquid which had no nutritive properties the waste-products were removed. Nothing that could yield energy to the muscles was added, yet the muscle retained its activity.

Pellagra Investigations in the West Indies

After leaving the North American continent, L. W. Sambon proceeded to the West Indies, where he visited Jamaica, Barbados, Trinidad, Grenada and other islands. In the hospitals, asylums and rural districts he met many cases of pellagra, and proved the existence of the disease in several areas in which its presence had previously been unknown. Dr. Sambon also visited British Guiana and found pellagra along the coast from Demarara to the Berbice River. In part of his trip Dr. Sambon was accompanied by Captain Siler, U. S. Army, chief of the American Pellagra Commission, and by Mr. Jennings of the Entomological Bureau, Washington, D. C. The observations made will certainly add much to the knowledge of the distribution of the disease. Besides the study of pellagra in its etiologic and epidemiologic aspects, a great deal of useful and interesting information has been gathered on the causation and topographic distribution of other tropical ailments, more especially blackwater fever, filariasis and elephantiasis, as well as on the subject of leprosy.—*Brit. Med. Jour.*

Beriberi in New Jersey

During a period extending over three years Dr. Livingood, jail physician at Elizabeth, N. J., has tabulated twenty-two cases of "jail edema" among the prisoners confined in the county jail. There is a history of this disease having occurred in the jail periodically during the last ten or fifteen years. It is stated that at least 80 per cent. of the prisoners serving more than ninety days contract the disease, and the belief that these were cases of beriberi has been confirmed. Herman B. Parker of the U. S. Public Health Service, in company with Dr. Livingood, saw six cases in the jail or in the hospital, all of which were diagnosed as beriberi. Of three patients seen in the jail, one had practically recovered and one presented typical symptoms of the paralytic form of the disease, dilated heart, absence of patellar reflexes, areas of anesthesia over the peroneal side of both legs, atrophy of muscles and pain on pressure over nerves. In the third case, although the prisoners had not previously come under medical observation, well-marked areas of anesthesia over peroneal muscles and tibia, pain on pressure, a moderate grade of anemia and beginning edema of the left leg were found. Exaggerated patellar reflexes were found also in this case. No data are given in regard to diet or the sanitary surroundings of the prisoners in the report given by Parker in *Public Health Reports*, Feb. 6, 1914.

Medicolegal

Chiropractors for State Board Must Have Complied with Medical Practice Act

(Green et al. vs. Hodges, Governor (Kan.), 138 Pac. R. 605)

The Supreme Court of Kansas holds unanimously that Chapter 291 of the laws of that state of 1913, relating to the practice of chiropractic, and creating a board of chiropractic examiners, does not require the governor to appoint on that board persons who have not complied with the statutes regulating the practice of medicine and surgery.

The plaintiffs asked that the governor be required by mandamus to appoint the board. The first section of the act creates a state board of chiropractic examiners, to be composed of "one ordained minister, one school-teacher, and three practicing chiropractors of integrity and ability, who shall be residents of the state of Kansas and shall have practiced chiropractic continually in the state of Kansas for a period of not less than two years." The governor, in giving the matter consideration, asked and obtained the opinion of the attorney-general, in which that officer advised that there was such ambiguity in the statute that action by the governor ought not to be taken.

The plaintiffs averred that they were engaged in the practice of chiropractic, were graduates of schools and colleges of chiropractic, possessed the necessary qualifications, and were desirous of obtaining a certificate to practice chiropractic in the state, and that there were many others for whom they also appeared, who were entitled to such certificates. But it was not stated in the petition that the plaintiffs, or any of the persons represented by them, had complied with the statutes relating to the practice of medicine and surgery, although the law required such compliance. The statute referred to, before its amendment in 1913, declared that: "From and after the first day of September, 1901, any person who shall practice medicine and surgery or osteopathy in the state of Kansas without having received and had recorded a certificate under the provisions of this act, or any person violating any of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall pay a fine of not less than fifty dollars nor more than two hundred for each offense. . . ." The amendment of this section consisted only in the omission of the words "or osteopathy." That a certificate, as provided in the act from which this quotation is made, was a condition precedent to the right to practice chiropractic in Kansas was settled in *State vs. Johnson*, 84 Kan. 411, and adhered to in *State vs. Peters*, 87 Kan. 265, and *State vs. Cotner*, 87 Kan. 864, and is therefore not an open question.

As the practice of chiropractic without such a certificate is a criminal offense, the petition, which alleged such practice for two years, showed on its face violations of the law, and a criminal prosecution might be instituted for each specific act of practice defined in the statute, unless it should be presumed, without any averment of the fact, that the plaintiffs and others for whom they sued had such certificates. In passing the statute creating a chiropractic board, the legislature did not attempt to condone past offenses or relieve violators of the existing law in any way from its penalties.

The governor, by constitutional mandate, is charged with the duty to see that the laws are faithfully executed. It would be inconsistent to require the governor to reward with office under one law those who have persistently broken another law on the same general subject, which it is his equal duty to enforce. The court is persuaded that it was not within the legislative contemplation that he should do so, but that he should appoint the chiropractors on the board from those who had complied with the statute regulating the profession of medicine and surgery. There is no necessary conflict in these provisions. Indeed, Section 6b provides that "applicants for license under this act shall be required to pass the same examination in physiology, anatomy and hygiene and systematology required of licensed practitioners of medicine and surgery in this state." Whether the clause quoted refers to an examination by the same board licensing practitioners of medicine and surgery, or by the board created by this act, is not clear, and is not important to the present inquiry. The important fact is that chiropractors must pass an examination on the subjects named the same as other practitioners in medicine and surgery.

Validity as a Sanitary Measure of an Enactment Prohibiting the Discharge of Dense Smoke

(People vs. New York Edison Co. (N. Y.), 144 N. Y. Supp. 707)

The First Appellate Division of the Supreme Court of New York reverses a lower-court decision holding unconstitutional the section of the sanitary code providing that, "No person shall cause, suffer or allow dense smoke to be discharged from any building, vessel, stationary or locomotive engine or motor vehicle, place or premises within the city of New York, or on the waters adjacent thereto, within the jurisdiction of said city," etc.

The court says that, at the common law, smoke was neither included in the classification of public nuisances, nor embraced in the enumerated causes of such nuisances; but, since the early development of the common law, conditions with respect to the kinds and use of fuel have so materially changed that its ancient doctrines on the subject have long since ceased to be adequate. The marvelous growth of our manufacturing and transportation industries, the rapidly increasing urban population, congested in small areas, and the progress in scientific investigations with respect to conditions affecting health, have rendered it necessary in the interest of the public welfare to impose specific limitations and restraints on the use of private property that were unknown to the common law.

The possible effect of such smoke on those afflicted with weak or unhealthy lungs who are obliged to live in overcrowded tenements and for whose safety both the state and thousands of charitable people have been and are solicitous, as is shown by the establishment and maintenance of sanatoriums, is alone sufficient to indicate that this was a proper subject for legislative investigation and would warrant the enactment of appropriate regulations and restrictions of which the court may take judicial notice. Moreover, it is common knowledge that there would be great public discomfort and injury, both to health and to property, if the unrestricted use of soft coal were permitted in a large city.

It is evident that the object of this enactment was the prevention of the discharge of smoke of such a character and in such quantities that it might injuriously affect the public health or comfort, or injure property, and the court would not be warranted in convicting for a violation of this section, excepting on evidence from which an inference to that effect might be drawn. The application of this section was not intended to be limited to cases in which evidence is adduced embracing every element on which a conviction as for maintaining a public nuisance might have been had at common law, or even under the penal law, and it should not be so limited. The section should have a reasonable construction which would preclude a conviction for a mere accidental or occasional momentary discharge of dense smoke, but which would insure the prevention of a continuous discharge or a discharge at intervals of large volumes of smoke, such as is caused by the use of soft coal.

That there has been wide-spread progressive public agitation for the suppression of smoke nuisances is shown by the fact that in at least three states the legislature itself has declared dense smoke to be a public nuisance in and of itself, or it was so declared under authority clearly delegated by the legislature, after ordinances to the same effect had been declared void, as unauthorized, and the later legislation was in every instance sustained.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

Alabama Medical Association, Montgomery, April 21-24.
Am. Assn. of Genito-Urinary Surgs., Stockbridge, Mass., May 15-16.
Am. Assn. of Pathologists and Bacteriologists, Toronto, Apr. 10-11.
American Dermatological Association, Chicago, May 14-16.
American Gynecological Society, Boston, May 19-21.
American Neurological Association, Albany, May 7-9.
American Ophthalmological Society, Hot Springs, Va., May 12-13.
American Surgical Association, New York, April 9-11.
Arizona Medical Association, Tucson, April 21-22.
Arkansas Medical Society, Eldorado, May 19-22.
Association of American Physicians, Atlantic City, May 12-13.
California State Medical Society, Santa Barbara, April 14-16.
Connecticut State Medical Society, New Haven, May 20.
Florida Medical Association, Orlando, May 13-15.
Georgia Medical Association, Atlanta, April 14-16.
Illinois State Medical Society, Decatur, May 19-21.
Iowa State Medical Society, Sioux City, May 13-15.
Kansas Medical Society, Wichita, May 6-7.
Louisiana State Medical Society, New Orleans, April 20-23.
Maryland Medical and Chir. Faculty, Baltimore, April 28-30.
Mississippi State Medical Association, Columbus, April 14-16.
Missouri State Medical Association, Joplin, May 12-14.
Nat. Assn. for Study and Prev. of Tuberculosis, Washington, May 7-9.
Nebraska State Medical Association, Lincoln, May 12-14.
New Hampshire Medical Society, Concord, May 13.
New York State Medical Society, New York, April 28-30.
North Dakota State Medical Association, Grand Forks, May 13-14.
Ohio State Medical Association, Columbus, May 5-7.
Oklahoma State Medical Association, Guthrie, May 12-14.
South Carolina Medical Association, Florence, April 14-16.
Tennessee State Medical Association, Memphis, April 7-9.
Texas State Medical Association, Houston, May 12-14.
West Virginia State Medical Association, Bluefield, May 13-15.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Albany (N. Y.) Medical Annals

March, XXXV, No. 3, pp. 115-178

1 Factors of Safety in Treatment of Fractures. J. L. Bendell, Albany.
2 Diseases of Nasal Accessory Sinuses. E. A. Stapleton, Troy City.
3 Autogenous Vaccines in Colon Bacillus Infections. W. B. Stone, Schenectady.

American Journal of Medical Sciences, Philadelphia

March, CXLVII, No. 3, pp. 313-468

4 *Etiology and Pathogenesis of Bronchiectasis. C. P. Howard, Iowa City, Ia.
5 Spontaneous Rupture of Spleen in Typhoid; Report of Case Cured by Splenectomy. L. A. Conner and W. A. Downes, New York.
6 *Pathology of Thyroids from Cases of Toxic Non-Exophthalmic Goiter. L. B. Wilson, Rochester, Minn.
7 Prognostic Value of Renal Function. L. G. Rowntree, Baltimore.
8 *Iron in Cells of Central Nervous System. D. J. McCarthy, Philadelphia.
9 *Apparatus for Production of Therapeutic Pneumothorax. S. A. Knopf, New York.
10 *Tonsillar Infection. G. B. Wood, Philadelphia.
11 Broader Issues of Psychoanalytic Movement. J. J. Putnam, Boston.

12 *Improvement of Benedict Method for Determination of Sugar in Urine. W. Weinberger, New York.
13 Application of Calculus to Medical Sciences. I. J. Schwatt, Philadelphia.
14 *Fibroma Molluscum Gravidarum. R. L. Sutton, Kansas City, Mo.
15 *Rheumatoid Arthritis. R. Pemberton, Philadelphia.

4. **Etiology and Pathogenesis of Bronchiectasis.**—Four cases are analyzed by Howard. He points out that bronchiectasis is not an infrequent clinical condition, and is too often mistaken for pulmonary tuberculosis. The possibility of a foreign body or syphilitic stenosis must always be excluded as etiologic factors. Roentgenograms are helpful in the case of a foreign body, but bronchoscopy should be carried out to exclude a foreign body and to treat a possible stenosis of a bronchus. The etiology is manifold, but the inflammatory causes are the most common. Of the various theories Howard believes that advanced by William Ewart is the most rational and scientific. It considers a faulty distribution of air space as a predisposing factor common to all cases. The general mechanism of dilatation is found in obstruction in the broadest sense of the word.

6. Also published in *Journal-Lancet*, February 15, and abstracted in THE JOURNAL, March 14, p. 881.

8. **Iron in Cells of Central Nervous System.**—A careful investigation was made by McCarthy of ganglion cells in the brain of a patient who suffered from an extensive hemorrhagic encephalitis in the cortex. The iron reaction was not demonstrated in the cortical ganglion cells in this case, but was obtained in a striking cell reaction in the plasma-like cells of the pia-arachnoid and in the elastic coats of the smaller cortical arteries.

9. **Apparatus for Production of Therapeutic Pneumothorax.**—This new apparatus described by Knopf was originally the Forlanini apparatus, which was modified by Saugman, again by Muralt and Nebel, and then on Knopf's suggestion made in a little more substantial form, more easy to transport, more clearly graduated, and with glass tubes inserted in the rubber hose connecting the apparatus with the thoracic cavity.

10. **Tonsillar Infection.**—This is a preliminary report concerning the passage of anthrax bacilli through the tonsillar tissues as determined by experimental research. Wood found that the tonsils in the hog are more readily infected by the anthrax bacillus than any other portion of the buccal or pharyngeal mucosa. The clinical history of this disease in the hog shows that in a great majority of idiopathic cases, the pharynx is the site of the invasion, and in all these cases of pharyngeal disease the tonsils are the portal of entrance. In none of Wood's experiments was there any involvement of the pharyngeal or buccal mucosa other than the tonsils.

While the culture of anthrax was generally brought into the more intimate contact with one of the tonsils it was impossible to limit the bacilli to the tonsillar surface and they must have come in contact with a large part of the pharynx. At the inoculation an effort was made to rub the emulsion into one tonsil only, but in only one case were the lesions limited to only one tonsil, and in this case the tonsil affected was not the one on which the culture had been rubbed.

Anthrax bacillus peneterates through the cryptal and not the surface epithelium and probably always gains access to the parenchyma of the tonsil by passing through the living, unaltered cryptal epithelium, and having gained access through the superficial layers of this epithelium it tends to multiply in the deeper layers and then pass into the interfollicular tissue. The anthrax bacillus penetrating through the living normal epithelium causes a devitalization of the tissue which paves the way for a secondary infection from the staphylococci or other pathogenic organisms. The rapidity of the invasion is influenced both by the virulence of the organism used and by the susceptibility of the individual animal. Following the invasion the subsequent course of the disease is similar to that in other tissues.

12. **Benedict Method for Sugar in Urine.**—The modification of this list by Weinberger consists in the addition, just before heating, of approximately 10 grams (two heaping teaspoonfuls) of powdered calcium carbonate to the contents of the porcelain dish (25 c.c. of Benedict's solution, 10 to 20 gm. of crystallized sodium carbonate or one-half the weight of the anhydrous salt, and a small quantity of powdered pumice stone). Thereon the titration is conducted in the usual manner. The snow white calcium carbonate, insoluble and suspended in the alkaline solution, appears to act in a manner similar to that of sulphocyanate of copper, by effectively obliterating all color except the blue of the unreduced copper compound. The end-point obtained is sharp, the blue color being visible up to the addition of the last two drops of urine that are necessary for complete reduction, a pure white residue remaining. It is necessary, however, to add a sufficient amount of calcium carbonate, about 10 gm., otherwise the residue will appear gray and the end-points less distinct. In order to prevent sudden violent ebulition of the hot concentrated solution, it is advisable to dilute the latter with a few cubic centimeters of distilled water.

Weinberger's experiments show that the addition of calcium carbonate does not cause any unfavorable effect on the accuracy of the titration.

14. **Fibroma Molluscum Gravidarum.**—Sutton claims that the lesions of fibroma molluscum gravidarum are histologically identical with those of fibroma molluscum (the neurofibromas of von Recklinghausen).

15. **Rheumatoid Arthritis.**—Pemberton holds that rheumatoid arthritis is a preventable disease. In most instances, except where the general health is undermined by great deformities and sequelae of long standing, the disease can be arrested. For clinical purposes at least it seems to belong in the category with diabetes and gout, in that there is in each case a limit of toleration for carbohydrates, on the one hand, and proteins on the other. The rôle of the fats is not yet entirely clear, but they may prove to be borne analogously to the carbohydrates and proteins. After arrest of the arthritis the diet can generally be gradually increased until in some cases it differs but little from that of health. Both hypertrophic and atrophic arthritis respond to these measures, and their common etiology seems probable. The presence of an intercurrent or possibly causative infection is not necessarily a contra-indication to treatment, and recovery may take place in spite of it, though such factors should be eliminated if possible.

The large group of cases in which a causal source of infection cannot be found or removed, Pemberton says, lends itself particularly to these measures. Care is necessary to determine the highest level of metabolic equilibrium at which the arthritis will subside, and at or near that point the patient should be maintained. While the general health improves with the subsidence of the arthritis, and though the patients seem to acquire a toleration for a larger dietary, the general principles above described must be observed rigidly or relapse will occur. The disease is apparently not due to faulty elimination through the bowels or kidneys. It is clearly not due to "intestinal putrefaction" so-called. There is no reason to exclude protein in dietary treatment, and the ordinary carbohydrate foodstuffs are also clearly capable of causing the disease.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

March, LXIX, No. 3, pp. 409-580

16 Ovarian Pregnancy, with Case Report. M. Caturani, New York.
17 Two Cases of Formation of Artificial Vagina by Intestinal Transplantation. H. J. Boldt, New York.
18 Cesarean Section for Complete Prolapse of Cervix. S. P. Warren, Portland, Me.
19 Newer Conception of Syphilis and Parturition. R. W. Lobenstine, New York.
20 Extensive Rupture of Uterus in Fifth Month of Pregnancy; Supravaginal Hysterectomy: Recovery. R. Wallace, Chattanooga, Tenn.
21 Clonus in Toxemia of Pregnancy. T. C. Merrill, Washington, D. C.
22 Colon Bacillus Infections of Urinary Tract in Women. H. D. Furniss, New York.
23 Colon Bacillus Infection of Uterus, Tubes and Ovaries. E. Foskett, New York City.
24 Determination of Patency of Fallopian Tubes by Use of Collargol and Roentgen-Ray. W. H. Cary, Brooklyn.

25 Technic of Cranial Perforation of Fetus. H. C. Bailey, New York.
26 New Form of Obstetric Table. B. B. Wechsler, Pittsburgh.
27 Present Status of Fibroids of Uterus. A. J. Schoenberg, Chicago.

Archives of Pediatrics, New York

February, XXXI, No. 2, pp. 81-160

28 St. John's Guild of New York City. W. M. Hartshorn, New York.
29 Study of Child in Tuberculous Millieu. (To be Continued.) M. Fishberg, New York.
30 Theories of Acidosis in Children. M. Y. Marshall, Ann Arbor, Mich.
31 Literature on Osmosis and Edema in Infancy and Childhood. L. Watermann, Ann Arbor, Mich.

Bulletin of Johns Hopkins Hospital, Baltimore

March, XXV, No. 277, pp. 69-99

32 Cases Received in Henry Phipps Psychiatric Clinic. D. K. Henderson, Baltimore.
33 Essential Sialorrhea in a Dog, Cured by Excision of Parotid, Submaxillary and Portion of Sublingual Glands. J. W. Churchman, Baltimore.
34 *Use of Collargol in Pyelography. C. W. Vest, Baltimore.
35 Koplik's Spots on Tonsils of a Child Found to be Anaphylactic to Egg-Albumin. S. R. Miller, Baltimore.
36 Brief History of Quarantine. W. W. Ford, Baltimore.
37 Tattoo Marks for Identification of Animals in Laboratories. J. A. Hunnicutt and A. P. Jones, Baltimore.

34. **Use of Collargol in Pyelography.**—At operation, collargol has been found by Vest in the kidney and perirenal tissues in five cases, and in one case in the peritoneal cavity. The kidney and perirenal tissues in these cases were colored dark brown or bluish black and were edematous. The amount of discoloration was noticed in one instance to extend throughout the entire retroperitoneal space of the side injected. In this case a retroperitoneal abscess developed which necessitated a second operation. The time between the injection and operation varied from one to five days. Both 10 per cent. and 15 per cent. solutions were used. No difference in the resulting clinical symptoms was noted. Pain may be quite severe, lasting for two or three days, and once for ten days. There may be a definite rise in temperature from 102 F. being reported in two cases and 104 F. in another.

While no case of nephritis has been shown to accompany these symptoms, there are definite urinary changes. The examinations have shown white and red blood corpuscles with hyaline and granular casts to be present three days following the injection; casts for nine days; and albumin in two cases for twenty-four days; while in a third case a trace was detected after 118 days. In three cases where collargol was used, death has followed, but it is not evident that it was precipitated by the collargol.

Vest urges that collargol should be used only when absolutely necessary. It should be allowed to run into the renal pelvis in small amounts and under very low pressure. A freshly prepared solution, not over 15 per cent. should be used. It is necessary that the symptoms mentioned be known by those using this method of pyelography, and that especial care be exercised to avoid their occurrence. On account of the results here shown Vest believes that some other medium must be sought which will give a shadow but not injure the renal substance. After a more extensive use of silver iodid emulsion, this material may be found to serve well.

Canadian Medical Association Journal, Toronto

March, IV, No. 3, pp. 181-276

38 Hypertrophy of Faucial Tonsil and Its Treatment. J. Price-Brown, Toronto.
39 Case of Primary Endothelioma of Pleura. F. A. Clarkson, Toronto.
40 Treatment of Tabes Dorsalis and General Paresis with Salvarsan. G. Bates, G. S. Strathy and C. S. McVicar, Toronto.
41 Septic Puerperal Infection. H. N. Vineberg, New York.
42 Loose Bodies in Knee-Joint. S. A. Smith, Winnipeg.

Iowa State Medical Society Journal, Washington

March III, No. 9, pp. 547-614

43 Surgical Treatment of Uterine Prolapse. G. G. Cottam, Sioux Falls, S. D.
44 Gastrocoloptosis. D. Macrae, Jr., Council Bluffs.
45 Associated Abdominal Troubles. W. F. Cram, Sheldon.
46 Doctor's Wife. O. L. Chaffee, Waverly.
47 Diagnosis and Treatment of Cholelithiasis. A. G. Hejinian, Anamosa.
48 Public Health Work of Twenty-Seven Iowa Cities and Towns. M. F. Boyd, Boston.
49 *Operative Treatment of Mammary Carcinoma. C. E. Ruth, Des Moines.
50 Value and Limitations of Cystoscopy in Diagnosis. E. J. Harnagel, Des Moines.
51 Pyelo-Cystitis in Childhood. M. J. Moes, Dubuque.

49. Abstracted in The Journal, February 7, p. 487.

Journal of Biological Chemistry, Baltimore

March, XVII, No. 2, pp. 99-304

52 *Determination of Total Fats of Undried Feces and Other Moist Masses. G. J. Saxon, Philadelphia.
53 Ives Replica Diffraction Grafting in Spectroscopic Analysis. G. J. Saxon, Philadelphia.
54 *Theory of Diabetes. A. I. Ringer, Philadelphia.
55 Action of Anesthetics in Suppressing Cell-Division. R. S. Lillie, Woods Hole, Mass.
56 Organic Phosphoric Acid of Cotton Seed Meal. R. J. Anderson, Geneva, N. Y.
57 Phytin in Oats. R. J. Anderson, Geneva, N. Y.
58 Phytin in Corn. R. J. Anderson, Geneva, N. Y.
59 Chemistry of Phytin. R. J. Anderson, Geneva, N. Y.
60 Carotin, The Principal Natural Yellow Pigment of Milk Fat. L. S. Palmer and C. H. Eckles, Columbia, Mo.
61 Id. L. S. Palmer and C. H. Eckles, Columbia, Mo.
62 *Yellow Lipochrome of Blood Serum. L. S. Palmer and C. H. Eckles, Columbia, Mo.
63 Fate of Carotin and Xanthophylls in Digestion. L. S. Palmer and C. H. Eckles, Columbia, Mo.
64 *Pigments of Human Milk Fat. L. A. Palmer and C. H. Eckles, Columbia, Mo.
65 Lactochrome, Yellow Pigment of Milk Whey. L. S. Palmer and L. H. Cooledge, Columbia, Mo.
66 *Absorption and Fate of Tin in Body. W. Salant, J. B. Rieger and E. L. P. Treuthardt, Washington, D. C.
67 Limitations of Kjeldahl Method. H. D. Dakin and H. W. Dudley, New York
68 Chemistry of Gluconeogenesis. A. I. Ringer, Philadelphia.
69 Composition and Properties of Caseinates of Magnesium. L. L. Van Slyke and O. B. Winter, Geneva, N. Y.
70 Influence of Hydrazine on Glycogen Storage and on Blood Composition. F. P. Underhill, New Haven, Conn.
71 Effect of Hydrazine Derivatives on Blood-Sugar. F. P. Underhill, New Haven, Conn.
72 *Rôle of Muscle in Hydrazine Hypoglycemia. F. P. Underhill and A. L. Prince, New Haven, Conn.

52. **Determination of Total Fats of Moist Feces.**—The procedure detailed by Saxon is essentially a combination of the method of Folin and Wentworth for the determination of the total fats of powdered dried feces, and the method of Meigs for the determination of the fat of milk.

54. **Theory of Diabetes.**—Ringer's experiments suggested to him the rôle of glucose in the normal individual in preventing acidosis to be such as to deviate the *B*-hydroxybutyric acid from its ordinary course of oxidation, by combining with it and thereby changing its structural configuration so as to give rise to non-acetone genetic products. Two factors seem to be necessary for the prevention of acidosis: (1) The presence of an abundance of carbohydrates in the diet to combine with all of the *B*-hydroxybutyric acid as it produced in the intermediary metabolism of the fatty acids, leucin, tyrosin, etc. (2) The ability of the individual to accomplish the "glucosid union" with *B*-hydroxybutyric acid.

Ringer assumes that glucose acts antiketogenetically by forming a glucosid compound with *B*-hydroxybutyric acid. It seems reasonable to him to assume that since glucose and *B*-hydroxybutyric acid circulate in abundance in the blood of the diabetic, the immediate cause of acidosis may be due to the failure of that individual to accomplish this glucosid union. As *B*-hydroxybutyric acid rises in metabolism, it circulates in the blood as such, and becomes partly oxidized to aceto-acetic acid, which, in turn, is converted into acetone, all three substances being finally eliminated in the urine.

Ringer also believes that the failure of diabetics to form glycogen may be explained on exactly the same basis. In the formation of glycogen a glucose molecule attaches itself to another glucose molecule, forming a glucose-glucosid or maltose.

This glucose-glucosid with its free aldehyd radical attaches itself to a similar molecule giving rise to a carbohydrate with four glucose components. This reaction goes on, constantly increasing the size of the molecule, until the glycogen stage is reached. The chemical characteristic of all these unions is the same, namely "glucosid formation."

The failure to accomplish the glucosid union is at the bottom of all the chemical disturbances in diabetic individuals.

The failure to form glycogen, with the consequent hyperglucemia, the failure to burn glucose, and the disturbance in the combustión of the lower fatty acids, can all be explained on the basis of this theory. This failure may come on gradually, affecting first the maltose and glycogen formation, which becomes manifested by lowered sugar tolerance, hyperglucemia and alimentary glucosuria. As the disease progresses the glycogen formation becomes more and more interfered with, until there is permanent glucosuria.

As long as enough glucosid-genetic function remains to cause the conjugation of all the hydroxy fatty acids as they rise in the intermediary metabolism of the fatty acids and of protein, so long will acidosis not come into evidence. When, however, this begins to fail, acidosis appears, and the diabetic enters on the "moderately severe" stage when even the sugar that originates from the metabolism of protein is not completely utilized. When the glucosid-genetic power of the individual fails completely, there ensues the most severe type of diabetes, which is associated with complete failure in sugar combustion, giving a D ÷ N ratio of about 3.6, when on a fat protein diet and a degree of acidosis which corresponds to almost the theoretical amount of *B*-hydroxybutyric acid that can rise from the fat and protein metabolism.

62. **Lipochrome of Blood Serum.**—These papers by Palmer and Eckles on the pigment of cows' milk fat may be summarized as follows: The well-known lipochrome of the blood serum of the cow is, like the lipochrome of the milk fat, body fat, etc., of the same animal, composed principally of carotin, the widespread hydrocarbon pigment of plants. Associated in small quantity with the carotin of the serum, probably dissolved in the fat of the blood, are one or more xanthophyll pigments which are always found in more or less variable quantity associated with the carotin of plants.

The carotin and xanthophylls of the blood serum are derived from the blood and furnish the normal source for these pigments in the milk fat and body fat, etc. A variation in the quantity of these pigments in the food results in a corresponding variation in the amount found in the blood serum and milk fat. Body fat formed during this time will also be affected. The carotin is carried by the blood serum in combination with an albumin. The combination is a very firm one. Lecithin and cholesterol are probably a part of the combination. Palmer and Eckles propose the name caroto-albumin for the new chromo-protein of the blood. The caroto-albumin of the blood serum of the cow is probably of importance in the formation of milk fat, body fat and the corpus luteum of the cow. It is doubtful if this new pigmented protein is of importance in the oxygen respiration of the body. The lactalbumin of cows' milk may, among other factors, be related to the color of the milk fat. There appears to be a special relation here in connection with the high color and high albumin content of colostrum milk.

64. **Pigments of Human Milk Fat.**—The fat of human milk may be tinted by carotin and xanthophylls, the pigments which characterize the fat of cows' milk. The relative proportion of carotin to xanthophyll in human milk fat is much more nearly equal than in the fat of cows' milk. The colostrum fat of human milk is characterized by a very high color as is the case with the fat of the colostrum milk of cows. The authors are convinced that the pigment of human body fat is no doubt identical with the pigment of human milk fat.

66. **Absorption and Fate of Tin in Body.**—After the subcutaneous injection of soluble tin salts the authors noted that the metal may be found in the urine and in the contents of the gastro-intestinal canal, smaller quantities being present in the urine. Twenty to twenty-five per cent. was found in the skin; the liver contained amounts carrying between 1.5 and 8 mm., or an average of about 5 per cent. of the amount injected. After feeding soluble salts of tin to rabbits for three or four days, and to dogs for two to four weeks, only traces could be detected in the urine. After feeding soluble tin salts to rats for four months, appreciable quantities were found in the body. Soluble tin salts given intravenously disappeared from the circulation within two to three hours.

These data the authors believe justify the conclusions that the gastro-intestinal tract is the chief organ for the elimination of tin; that the kidney plays a subordinate though an important rôle. Elimination of the metal is very slow; appreciable quantities are eliminated during the first and second days. Absorption of tin from the gastro-intestinal tract may take place under certain conditions.

72. **Rôle of Muscle in Hydrazine Hypoglycemia.**—Underhill and Prince found that hydrazine subcutaneously administered to rabbits causes no greater quantity of sugar to disappear from a solution perfused through the heart than that obtained with hearts of non-hydrozinized animals in a comparable nutritive condition. With non-hydrazinized rabbits the nutritive condition, and hence possibly the quantity of glycogen present in the tissues, as indicated by starvation experiments, is apparently a factor in determining the sugar disappearance mentioned.

In confirmation of the work of previous investigators it is shown that sugar disappearance from the perfusion fluid with the beating heart is little different from that obtained when the heart is not beating and is relaxed to a minimum. These experiments therefore fail to answer the question as to the cause of diminution of blood sugar content after hydrazine administration.

Journal of Cutaneous Diseases, New York

March, XXXII, No. 3, pp. 187-256

73 Nevus Follicularis Keratosus. C. J. White, Boston.
74 Hypernephroma with Adrenal Deficiency, Scleroderma and Sclerodactylia. H. Brooks, New York.
75 Case of Lingual Tuberculosis (Primary). W. B. Trimble, New York.
76 Intestinal Microorganisms with Reference to Skin Lesions. J. S. Willock, Baltimore.
77 Investigations in Psoriasis. L. W. Ketron, Baltimore.
78 Dermatitis Exfoliativa. A. Ravogli, Cincinnati.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, V, No. 4, pp. 317-424

79 *Quantitative Studies of Vagus Stimulation and Atropin. J. D. Pilcher and T. Sollmann, Cleveland.
80 *Alkaloids of Quebracho. D. Cow, Cambridge.
81 *Changes in Circulatory System in Periodic Respiration. A. J. Clark and P. Hamill, London.
82 Calibration of Waller Gas Balance and Connell Anesthetometer. W. M. Boothby and I. Sandiford, Boston.
83 *Determination of Anesthetic Tension of Ether Vapor in Man; Mode of Action of Common Volatile Anesthetics. W. M. Boothby, Boston.
84 Two Types of Periodic Respiration Due to Morphin. H. G. Barbour, London.

79. **Vagus Stimulation and Atropin.**—The experiments conducted by Pilcher and Sollman showed that the heart rate after division of the vagi is influenced by the rate prevailing before the vagi were divided. The cardiac accelerator tone probably plays an important rôle in maintaining the normal heart rate. Simultaneous stimulation of the vagi with sublimital currents gives no summation, but with submaximal currents, there is a limited tendency toward summation. The current necessary to arrest the heart is only one-fourth to three times greater than the highest current which produces no noticeable showing. The dose of atropin to produce the full effect is only two to four times as great as the smallest effective dose. A partial atropin effect can be overcome by strengthening the stimulation, but the antagonism is limited. The left vagus is less susceptible to stimulation, and more susceptible to atropin than is the right vagus. This renders the animals more susceptible to atropin and less so to vagus stimulation.

The duration of atropin paralysis varies with the dose. Small doses of atropin have no effect on blood-pressure when the vagi are divided; with intact vagi, the rise is secondary to the increased heart rate and not to vasomotor stimulation.

The authors conclude that the susceptibility of the vagi to electrical stimulation and to atropin paralysis are governed by the same factors, but inversely: whatever increases the susceptibility to stimulation lowers the susceptibility to atropin, and vice versa. The threshold and the maximal value lie rather close together, both for *stimulation and for* atropin. Within this narrow range, summation and antagonism are additive; outside of this range, they are not influenced by one another. Therefore, a maximal atropin effect (though the dosage is not very much greater than the threshold) cannot be overcome by the strongest vagus stimulation; or a subthreshold vagus stimulation cannot be brought above the threshold by stimulating the other vagus.

80. **Alkaloids of Quebracho.**—Quebrachine, according to Cow, is by far the most toxic of the four alkaloids investigated. In small doses it exerts a stimulating action on the central nervous system, as also do the other alkaloids. The only obvious objective effect of this is seen in the respiration, which becomes both quicker and deeper. The chief action of quebrachine in large doses is a paralyzing effect on nerve-cells; this includes nerve-cells on the autonomic system, the brain and cord. After first paralyzing nerve-cells, quebrachine in still larger doses paralyzes the vagus, the sympathetic and motor nerve-endings. Cow places quebrachine in the curare-nicotine-coniine group of drugs. It causes death by paralyzing the respiratory center at a time when the motor nerves are still responsive to electrical stimulation.

81. **Changes in Circulatory System.**—In the four cases of periodic respiration described by Clark and Hamill definite circulatory changes were associated with the end of the apneic period. In one case these changes were extremely pronounced. The circulatory changes observed were, a slowing of the pulse, a fall in the blood-pressure, and an increase in the a-v interval. These clinical results agree with the results obtained by Barbour on animals, and show that in some cases of periodic respiration the asphyxial changes in the blood during apnea are sufficient to affect the heart tissue directly. The administration of pure oxygen will relieve the irregularity of the respiration and of the cardiac action, even in extreme cases of periodic respiration, provided that the oxygen be given at an efficient concentration. The occurrence of periodic changes in the circulation when associated with depression of the respiratory center will assist in maintaining periodicity of respiration.

83. **Anesthetic Tension of Ether Vapor.**—The term "anesthetic tension," is employed by Boothby to indicate the partial pressure of ether vapor that, after equilibrium is established, can, for an indefinite period, maintain the subject in the stage of ideal surgical anesthesia. Curves are given showing the anesthetic tension of ether vapor for man is between 47 and 54 mm., probably 51 mm. A working hypothesis based on the theory of Meyer and Overton is suggested to explain the mode of action of the volatile inhalation anesthetics which can be summarized in the quantitative reversible equation $Mn + An \rightleftarrows MnAn$ in which the percentage saturation of the susceptible molecules in the nerve cells (Mn) and, therefore, the inhibition of the cell function (the depth of anesthesia), is dependent on the tension of the anesthetic vapor (An) to which these susceptible molecules are exposed.

To harmonize the fact that large variations occur in the amount of ether required by the usual methods of anesthesia with the fact that the same ether tension produces the same degree of anesthesia in all patients, it is pointed out by Boothby that the apparent variation can be accounted for by (*a*) changes in volume of respiration; (*b*) changes in rate of circulation, and (*c*) by a possible alteration in the rapidity with which the above reversible reaction takes place under a slightly different chemical environment.

Lancet-Clinic, Cincinnati

March 7, CXI, No. 10, pp. 265-296

85 Non-Suppurative Disease of Labyrinth. Von Eicken, Hess, Germany.
86 Hospitals and Their Relation to Medical Colleges and Train*ing of Interns. C. R. Holmes, Cincinnati.*
87 *Classification of Gastro-Intestinal Diseases of Infancy. I. A. Abt, Chicago.
88 *Feeding of Sick Infant. F. C. Neff, Kansas City, Mo.

March 14, CXI, No. 11, pp. 297-328

89 *Points in Treatment of Acute Ileo-Colitis. J. R. Snyder, Birmingham, Ala.
90 Essentials of Modern Artificial Feeding of Infants. R. A. Strong, Pass Christian, La.
91 Syphilis of Nervous System; Its Mode of Attack, Diagnosis and Treatment. E. A. North, Cincinnati.
92 Quarantine in Diphtheria. E. A. Fennell, Cincinnati.

87-88. Abstracted in The Journal, Nov. 15, 1913, p. 1840.

89. Abstracted in The Journal, Nov. 15, 1913, p. 1841.

New York State Journal of Medicine

February, XIV, No. 2, pp. 57-118 (Omitted from The Journal, *March 21, p. 967)*

93 Desirability of Greater Uniformity in Tests for Heterophoria. L. Howe, Buffalo.
94 Operative Treatment of High Myopia. W. E. Lambert, New York.
95 Conservative Treatment of Chronic Aural Suppuration. R. L. Loughran, New York.
96 Operative Findings and Results in Mastoiditis, Acute and Chronic. J. M. Ingersoll, Cleveland.
97 Tuberculous Affections of Ear. T. H. Farrell, Utica.

Northwest Medicine, Seattle, Wash.

March, VI, No. 3, pp. 61-90

98 Diagnosis and Treatment of Suppurative Diseases of Nasal Accessory Sinuses. R. Levy, Denver.
99 Interrelation between Systemic Diseases and Diseases of Eye, Ear, Nose and Throat. A. P. Lensman, Seattle.
100 *Decortication of Lung for Old Empyema. E. H. Beckman, Rochester, Minn.
101 Summary of Electrotherapeutics. E. Myers, Portland, Ore.
102 Crushing Injuries of the Extremities. R. S. Joyce, Ogden, Utah.
103 Use of Iodin in Emergency Wounds. D. K. Thyng, Tacoma.
104 Mycosis Fungoides. C. M. Cole, Caldwell, Ida.
105 Gastroenterostomy Under Local Anesthesia with Case Report. M. M. Null, Seattle.

100. **Decortication of Lung for Old Empyema.**—Five cases are cited by Beckman to illustrate the possibilities of this operation. The patients have their normal capacity restored, which, Beckman says cannot be said of any other operation for this condition. In his experience the procedure is not as severe as a complete Schede operation, although it appears much more formidable. Hemorrhage from the denuded lung is not ordinarily severe. In several instances it was extremely slight and, while the lung was injured enough to allow air-bubbles to escape in almost every case, no harm has arisen from such injury and apparently no infection in the lung has occurred.

Beckman does not claim that this operation is suitable for all cases of empyema with a large cavity, but with the patient in suitable physical condition it should be attempted before any other operative procedure for obliterating the cavity. It has not produced as much shock as the Schede operation and with reasonable care can be performed in many instances when the Schede operation was formerly indicated. But one death occurred in 11 cases in the Mayo clinic in which this procedure was used. This patient was physically below normal and had gone through a severe attack of typhoid and measles within the year. A large cavity existed which extended to the mediastinum with a connection into a large bronchus. Beckman believes that in this case the operation was carried too far or that the patient received a shock from too much manipulation along the pneumogastric nerves.

Ohio State Medical Journal, Columbus

March, X, No. 3, pp. 129-192

106 Practical Points in Obstetrics. J. F. Baldwin, Columbus.
107 Relation of Mouth and Teeth to Health and Disease. H. C. Brown, Columbus.
108 Simple Operation for Removal of Spurs and Deflections of Nasal Septum. C. P. Linhart, Columbus.
109 *Treatment of Delirium Tremens by Subdural Injection of Sodium Bromid. S. P. Kramer, Cincinnati.
110 Hysterics. M. K. Isham, Columbus.

109. **Treatment of Delirium Tremens.**—After some experimentation on the lower animals with various salts Kramer found that 1 per cent. solution of sodium bromid might be injected into the spinal canal of animals without immediate or remote harm to the nervous system of the animal. He then applied this knowledge to the treatment of delirium tremens. He has used the treatment in a series of twenty cases and vouches for its safety and efficacy. The technic of the treatment consists in the withdrawal of cerebrospinal fluid through lumbar puncture in amounts as great as possible —namely 50 to 60 c.c. The same amount of a sterile 1 per cent. solution of sodium bromid is injected with a syringe. There is absolutely no danger from increased subdural pressure. This amount and even as high as 80 c.c. of fluid has been

injected into the subdural cavity in an interval of one minute without the least sign of increased intracranial pressure. Sodium bromid is not toxic to the nervous system. The potassium salt must not be used since it is slightly irritating. The patients as a rule show an immediate improvement, a lessened delirium within a few minutes after the injection. This immediate improvement, however, disappears after a short time, to be followed in from twelve to fifteen hours by a permanent disappearance of the delirium. Occasionally after a few days there may be a relapse which is usually controlled by a repetition of the injection.

Ophthalmic Record, Chicago

March, XXIII, No. 3, pp. 109-162

111 Parinaud's Conjunctivitis. G. F. Keiper, Lafayette, Ind.
112 Unusual Complicated Case of Sphenoidal Abscess Causing Amblyopia. C. M. Harris, Johnstown, Pa.
113 Set of New Lacrymal Probes. W. B. Weidler, New York.
114 Observations During Recent Trip to Europe. J. S. Clark, Freeport, Ill.
115 New Operation for Detached Retina. F. B. Tiffany, Kansas City, Mo.
116 Steel Lodging in Sclera. E. E. Krider, Oelwein, Ia.
117 Shield for Graefe Cataract Knife and Angular Keratome. F. P. Lewis, Buffalo.

Public Health Journal, Toronto

March, V, No. 3, pp. 139-206

118 Dental Inspection and School Dental Clinics. W. H. Doherty, Toronto.
119 Importance of Oral and Dental Conditions. W. P. Caven, Toronto.
120 Relationship of Medicine and Dentistry. I. H. Cameron, Toronto.
121 Medical Inspection of Schools in British Columbia, Quebec, Ontario.
122 Feeble-Minded and Backward Children. G. S. Mundie, Montreal.
123 Housewives' League. E. Curnett.
124 Typhoid Inoculation. W. B. Leishman, London.

Texas State Journal of Medicine, Fort Worth

March, IX, No. 11, pp. 333-362

125 Local Anesthesia with Special Reference to Hernia. C. W. Allen, New Orleans, La.
126 Embryology and Anatomy of Colon. O. L. Norsworthy, Houston.
127 Colonic Membranes. J. H. McLean, Fort Worth.
128 Injuries to Hip Joint and Surrounding Tissues. W. N. Wardlaw, *Corpus Christi*.
129 Amenorrhea and Dysmenorrhea. G. T. Hall, Big Springs.
130 Perineal Prostatectomy. T. J. Bennett, Austin.

West Virginia Medical Journal, Wheeling

March, VIII, No. 9, pp. 291-326

131 Etiology and Classification of Rheumatism. O. F. Covert, Moundsville.
132 Medical Notes on Central American Trip. J. E. Cannaday, Charleston.
133 Prevention of Typhoid by Vaccination. M. R. Stone, Parkersburg.
134 One Hundred Cataract Cases. J. L. Dickey, Wheeling.
135 Tuberculosis. I. C. Hicks, Huntington.
136 Relation of Lactic Acid in Stomach Contents to Carcinoma of that Organ. C. L. Holland, Fairmont.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

February 28, I, No. 2774, pp. 461-516

1 Anthropologic Study of Portraits of Shakespeare and Burns. A. Keith.
2 Hygienic Aspect of Coal Mining Industry in United Kingdom. (To be continued). F. Shufflebotham.
3 *Pathologic Changes of Thyroid in Disease. R. Farrant.
4 Dissemination in Carcinoma of Rectum. J. W. Heslop.
5 Effects of Epinephrin. M. Donaldson.
6 Alcohol, Housing Conditions and Tuberculosis. H. Vallow.

March 7, I, No. 2775, pp. 517-572

7 Visceral Lesions of Purpura and Allied Conditions. W. Osler.
8 Oral Sepsis Simulating Henoch's Purpura. T. S. Bradburn.
9 Case of Hysterical Monoplegia Following Electric Shock. P. Stewart.
10 Hygienic Aspect of Coal Mining Industry in United Kingdom. (Concluded). F. Shufflebotham.

3. Pathologic Changes of Thyroid in Disease.—The object of Farrant's paper is to point out those diseases and toxemias that do and those that do not produce an alteration in the thyroid, to describe the pathologic changes in the gland, to compare them with those seen in goiter, and to note when these changes are associated with signs of thyroid excess. The work is based on some 700 thyroids of man and guinea-pigs collected from post-mortem examinations during the last five years.

Farrant found that the first change that the thyroid undergoes as the result of an acute toxemia is an alteration in the colloid material. It loses its staining capacity, becomes granular, vacuolated and finally disappears. During this change the gland is congested with perhaps intervesicular hemorrhage. The walls of the empty vesicles become plicated, the short or flat epithelial cells lining the vesicles become high cubical and finally columnar and greatly increased in number. The plication of the walls and the cell increase go on until the vesicles, as such, are indistinguishable; during the transition the appearance is given of villous processes growing from the walls of the vesicles. When the hyperplasia is complete, the gland is hypertrophied, but its store of secretion is exhausted. The distinction between the acute and the complete hyperplasia is that in the acute the intervesicular hemorrhage is the most marked feature, the cell and vesicular changes have not progressed as far as that seen in the complete. The length of time that it takes to undergo a complete hyperplasia varies with the toxemia and its intensity; the whole change may take place in twenty-four hours.

So certain is this hyperplasia that the thyroids taken from any one of these acute infections can be arranged in the order of the duration of the disease as it corresponds to the degree of hyperplasia, allowance being made for the very acute infections which can be noted by the extreme degree of intervesicular extravasation. An acute toxemia thus causes a cycle of thyroid changes. First, there is an acute hyperplasia in which the gland becomes hypertrophied and exhausted; when the toxin is overcome the gland involutes back to normal, but the effect of the toxemia is evident by the diminution of thyroid tissue and the intervesicular fibrosis. In the less acute toxemia the cell hyperplasia is more marked and the subsequent formation of excess of colloid during involution.

There are three characteristic stages in chronic hyperplasia: first, when the vesicles are of equal size the colloid is partially absorbed and coarsely granular and the cells are proliferated; second, when the vesicles are of unequal size and packed with colloid with cell hyperplasia between them; and third, when the gland is cirrhotic with deficiency of thyroid tissue.

Glasgow Medical Journal

March, LXXXI, No. 3, pp. 161-239

11 Retraction Ring as an Obstruction in Labor. R. Jardine.
12 History and Prevention of Venereal Disease. D. Newman.
13 Drug Treatment of Phthisis Pulmonalis. J. Craig.

Journal of Laryngology, Rhinology and Otology, London

March, XXIX, No. 3, pp. 113-168

14 Technic of Intranasal Operation for Antral Sinus Suppuration. P. Watson-Williams.
15 Treatment of Catarrh of Eustachian Tube, with Analysis of Results in Seventy-One Cases. J. W. Wood.
16 Reports for 1913 from the Ear and Throat Department of Royal Infirmary, Edinburgh. J. Hewat.
17 Abscess of Nasal Septum Secondary to Furuncle of Vestibule. D. McKenzie.

Journal of Pathology and Bacteriology, Cambridge

January, XVIII, No. 3, pp. 305-444

18 Malakoplakia of the Bladder and Kidneys. S. McDonald and W. T. Sewell.
19 Technic of Cultivating Adult Animal Tissues in Vitro, and the Characteristics of such Cultivations. A. J. Walton.
20 *Experiments on Hemolytic Icterus. J. W. M'Nee.
21 Congenital Aneurysm in Young Rabbit. W. H. Harvey.
22 *Arsenious Acid-Glycerin-Gelatin ("Arsenious Jelly") Method of Preserving and Mounting Pathologic Specimens. S. Delépine.
23 Water Storage and Its Advantages. A. C. Houston.
24 *Typhoid Bacilluria; Description of Certain Atypical Coli-typhoid Bacilli Found in Urine in Enteric Fever. A. Patrick.
25 *Standardization of Bacterial Vaccines by Wright, Hemocytometer and Plate Culture Methods. E. Glynn, W. Powell, A. A. Rees and G. L. Cox.

20. Experiments on Hemolytic Icterus.—There is no doubt in McNee's mind that after removal of the liver, in geese poisoned with AsH, no marked icterus occurs. The weak icterus which occurred in some of his experiments after removing the liver, he believes must depend either on the functional activity of the spleen and bone-marrow, or on continued activity of the small piece of liver tissue left behind the vena cava. The reason why no marked icterus follows extirpation of the liver is not that the liver cells have been removed, but depends on the removal of the tissue enclosed within the liver which breaks down hemoglobin, namely, the endothelial cells of v. Kupffer. These cells have, at any rate, to do with the first phase in the production of bile, since they split off the iron part of the hemoglobin molecule and set free the pigment portion.

Neither from the experiments of Minkowski and Naunyn, nor from his own, can McNee draw a definite conclusion that a true hemolytic icterus cannot occur at all. On the contrary, the histologic appearances, especially the proliferation and desquamation of the Kupffer cells, their circulation in the blood-stream, and their destruction there, speak strongly in favor of the occurrence of an icterus without any action of the liver cells at all. The argument that when the liver is removed the homologous endothelial cells in the spleen and marrow do not take up the work is met by an extreme smallness of these latter organs in birds, and the short duration of the experiments.

An important question McNee says is how far these conclusions arrived at by experiments on geese can be applied to human pathology. Experiments certainly show that the structure of the liver is different in birds from that in higher animals. Quite apart from the relative difference in size of the organ in birds, there is in them a very special iron metabolism in the liver, with which, not the liver cells but the endothelial cells lining the vascular capillaries, have to do.

The appearances in a hemolytic icterus induced by toluylendiamin in dogs are not in any essential feature different from what he has observed in geese. The chief point of difference is that normal structure in dog's liver is different from that of birds. In dogs the endothelial Kupffer cells are much less numerous, and normally give no iron reaction. Thus in dogs the liver does not seem to be so directly associated with the iron metabolism as it is in birds. It is likely, McNee suggests, that the spleen in higher animals has taken on this function. But in icterus the endothelial cells of the dog's liver show changes quite similar to those found in geese, namely, phagocytosis of red corpuscles, disintegration of them and appearance of a diffuse iron reaction in the protoplasm. The cells being much fewer in number, these appearances are not so prominent and readily recognized.

In the spleen the changes seen in dogs and geese during icterus are also similar, but it has been sufficiently emphasized already how much larger an organ the spleen is comparatively in higher animals than in birds. In the lymph-nodes of dogs the changes are also very marked, and of a similar nature to those found in the spleen. In geese it was generally a matter of extreme difficulty to find lymph-nodes at all, and hence no observations were made on them. Taking all these points into consideration, it seems to McNee quite probable that, with modifications depending on the different importance of the spleen all that he has suggested in connection with the etiology of hemolytic icterus, from his experiments on geese, can be applied to higher animals and to man.

22. **Preserving Pathologic Specimens.**—The fixing agents which have given Delépine the best results are a 2 per cent. watery solution of bichromate of potash and a 4 to 8 per cent. watery solution of formaldehyd. To both these fixing and hardening reagents sulphate of soda may be added, so as to bring the specific gravity of the solution up to 1.024 to 1.028. These solutions allow one to give to the object the consistency suitable for cutting it into slices or for carrying out of necessary dissections; they do not affect the transparency of membranes, of colloid, or of mucous products; they do not alter, materially, the appearances of fat, muscular tissue, fibrous tissue, bone, etc. With hemoglobin they both produce insoluble compounds which have a color resembling closely the normal color of that product after passage of the fixed tissues through alcohol and embedding in "arsenious jelly."

The bichromate method has a serious disadvantage, owing to the fact that when the chrome salt is not entirely removed by long washing after hardening, a green discoloration is gradually produced. This difficulty is easily overcome when very thin slices of organs are treated, and Delépine has kept sections prepared by the bichromate method twenty-five years ago which have not altered in appearance. In the case of whole organs or thick sections, formaldehyd solution is better; it is also applicable to thin sections.

The method which Delépine now generally adopts is as follows: (*a*) Fixing Solution: Liquor formaldehyd (40 per cent. solution), 100 c.c.; water, 900 c.c.; to which may be added sulphate of soda, 20 gm. The specimens are left in this solution for from three days to two weeks, according to thickness. (*b*) Alcohol (80 to 90 per cent.). The specimens are left in this fluid until the color has returned as nearly as possible to its original tint. (*c*) Arsenious Acid Glycerin Fluid: Arsenious acid solution (made by boiling an excess of arsenious acid in water for two hours, and allowing the fluid to stand for twelve hours), 400 c.c.; pure glycerin, 600 c.c. The specimens are transferred from the alcohol to this solution, where they must be kept for one or two days at least. (*d*) Arsenious Acid Glycerin Jelly (formula for about 8 liters): (1) Coignet's gelatin (Gold label), 425 mm.; arsenious acid, saturated watery solution (see *c*), 1,500 c.c.; the dry gelatin, thoroughly cleansed, is added to the hot arsenious acid solution, in which it should be entirely dissolved in less than half an hour. (2) Hot arsenious acid jelly (see 1), 1,925 c.c. (say 2,000). Pure glycerin (hot), 5,760 c.c. (say 5,800). The two are mixed together and allowed to cool to about 20 C., then the white of six eggs and their broken shells are added and mixed thoroughly with the mass. The mixture is brought again to nearly boiling-point to coagulate the albumin, and is maintained at this temperature for two hours. The hot fluid is strained through flannel and then filtered through filter paper, the temperature of the fluid being kept at about 50 C. This takes from one to three days. This medium is absolutely transparent, and when set does not melt in the highest summer temperature.

24. **Atypical Colityphoid Bacilli in Urine in Enteric Fever.**—It was found by Patrick during the investigation of bacilluria in men suffering from enteric fever, that in six cases out of seventeen the bacilli were not typhoid bacilli, but members of the typhoid-coli group not previously described. *B. coli* did not occur in any of the seventeen cases. In seven instances of bacilluria in women with enteric fever, on the other hand, the bacillus present was found, in all but one, to be *B. coli.* These atypical bacilli appeared in the urine, on the average, rather after the date for typhoid bacilluria, and persisted for quite a short time, in three instances for one day only. Their appearance was not attended by any constitutional disturbance, and in general the cases resembled ordinary cases of typhoid bacilluria.

These bacilli, though practically unaffected by artificial anti-typhoid serum, were agglutinated in varying degrees by the serum of the patient from whom each was isolated, in one instance to a greater extent than was the stock typhoid bacillus by the same serum. The six bacilli were stored on agar slopes at a temperature of about 6 C., and on re-examination a year later were found to have acquired greater fermentative powers with regard to certain sugars. This property has usually been described as developing by continued growth and subculture of an organism in a solution of the sugar, but with these bacilli the power, though afterward increased by subculture, developed in many instances spontaneously.

25. **Standardization of Bacterial Vaccines.**—The most scientific method of enumerating bacteria according to these authors is in some form of hemocytometer chamber. An optically plane cover slip must be used with such apparatus, for it is recognized as essential when counting blood, and is still more essential when counting bacteria, where accuracy is of greater importance. Owing to the small free working distance of oil-immersion lenses, most optically plane cover slips are too thick. A weak solution of carbol thionin was found to be the best diluting and staining fluid.

Journal of Tropical Medicine and Hygiene, London

March, XVII, No. 5, pp. 65-80

26 *An Intestinal Protozoal Parasite Producing Dysenteric Symptoms in Man. A. Castellani.

26. **Intestinal Protozoal Parasite Producing Dysenteric Symptoms.**—In three cases presenting dysenteric symptoms Castellani observed a peculiar large protozoal parasite which most probably was the cause of the condition. In all three cases the clinical symptoms were those of an ordinary mild type of dysentery, either amebic or bacterial. The onset was rather abrupt with severe abdominal pain, tenesmus and diarrhea, with stools containing muco-pus and blood. The motions soon lost any trace of fecal matter and consisted only of muco-pus and blood.

In all cases the microscopic examination showed absence of lôschiae, cercomonads, trichomonads, balantidia and ova of worms; instead several large motile parasitic bodies were seen, rather elongated motile bodies, which on superficial examination gave the impression of being very large flagellates moving about. On close examination, however, no flagella could be detected. The parasitic bodies are large, elongated or oval; one extremity, the one which in stained preparations appears mammillary, is, so to speak, shaken by a peculiar, extremely frequent, vibrating movement, which makes one suspect the presence of flagella or an undulating membrane or cilia. Neither in fresh preparations nor in stained preparations has Castellani been able to detect flagella or cilia. The protoplasm has the same appearance all over the body of the parasite, presenting numerous roundish vacuoles, none of which are contractile. No distinct nucleus is evident, and there is apparently no distinct differentiation between ectoplasm and endoplasm. The parasite does not emit pseudopoda like an ameba, in fact, the changes in shape of the body of the parasite are slight, and very similar to those slight changes in the shape as found in flagellates, such as *Trichomonas hominis.*

The parasites move about fairly rapidly, though not so quickly as cercomonads or trichomonads; how motility is produced it is difficult to say. No pseudopoda are protruded and the body of the parasite shows only slight changes in shape. The anterior portion, as already stated, shows extremely rapid vibratory movements, but no flagella or cilia are seen, nor apparently, a definite undulating membrane, nor has Castellani been able to satisfy himself that there is emission of filiform pseudopoda. Attempts at cultivation have failed. Castellani is inclined to consider the parasite to represent a new genus and species, and as a temporary generic term, suggests the term "*entoplasma.*"

Lancet, London

March 7, I, No. 4723, pp. 659-730

27 Glycosuria and Albuminuria of Adolescents. J. F. Goodhart.
28 Infantilism. H. Gilford.
29 *Morbid Anatomy of Tuberculosis in Man. (Concluded.) T. Shennan.
30 Significance of Diabetic Family History in Life Assurance. O. May.
31 Acute Suppurative Appendicitis Complicated by Gangrene of Ileum. B. Hughes.

29. **Morbid Anatomy of Tuberculosis in Man.**—In Scotland Shennan says the maximum death-rate from tuberculosis occurs during the 25 to 35 age period; in England during the 35 to 45 period. The maximum percentage death-rate from tuberculosis calculated on the number of deaths from all causes, at each age period, occurs in the female during 15 to 20 age period, and in the male during the 20 to 25 age period. The percentage of deaths from tuberculosis in females during the 15 to 20 age period is 52.69. The death-rates from tuberculosis in different towns and cities in Scotland bear no clear relationship to the number of inhabitants or to the density of population. Therefore, Shennan concludes that other factors must be involved. Hypersensitiveness due to a primary infection he thinks is probably of great importance in relation to reinfections. Reinfections arise not necessarily from a previous focus in the body, but must frequently be new infections from without.

The majority of cases of tuberculosis of the lungs and their regional glands are the result of aerogenic infection. Retrograde infections do occur. There is no evidence in favor of a spread by direct continuity from the deep cervical glands to the lungs. The right lung and its regional glands are more often the seat of tuberculosis than the left. In children manifest tuberculosis of the lung is very frequently a sequel of tuberculosis of the bronchial glands. Little satisfactory is known of the factors which determine the localization of the disease in the lung. Chronic fibrocaseous tuberculous foci in the lungs and caseation of the related bronchial glands may be caused by separate infections. In Scotland bovine infections in childhood are commoner than in most other parts of the world. The relative frequency with which bovine or human infections occur in any given organ or tissue, and the differing incidence of these infections in different localities Shennan states depend on the relative general frequency of infections with these two types of the tubercle bacillus. This differs in different localities.

Sei-I-Kwai Medical Journal, Tokyo

February, XXXIII, No. 2, pp. 1-12

32 Primary Carcinoma of Lung. Inada.
33 On Volvulus. M. Takayasu.
34 Sixty-Four Cases of Ileus in Kagoshima-Byoin. S. Asahara.

Journal de Médecine de Bordeaux

February 22, LXXXV, No. 8, pp. 125-138

*35 Industrial Accidents to the Head Aggravating Incipient Paralysis, and Question of Workmen's Compensation. J. Vitrac and H. Verger.

Journal d'Urologie, Paris

February, V, No. 2, pp. 121-246

36 *Hematuria with Appendicitis. G. Nové-Josserand and H. Fayol.
37 High Frequency Currents in Local Treatment of Tuberculosis of the Bladder. M. Heitz-Boyer.
38 *Determination of Tubercle Bacilli in the Urine. E. Gautier.
39 *Bladder Stones in Mohammedans. (Lithiase vésicale primitive de l'enfant et de l'adulte chez les musulmans de l'Afrique du Nord.) J. Coudray.
40 Importance of the Ultramicroscope in Diagnosis of Syphilis in Early Stage. Lévy-Bing.

36. **Hematuria with Appendicitis.**—Three personal cases are reported and twenty-eight from the literature are reviewed; the diagnosis may be difficult when the appendicitis is in a torpid, chronic stage. The hematuria may not appear until just after the appendix has been removed, but it generally comes on with the stormy onset of acute appendicitis. Hematuria of appendicitic origin is generally brief but intermittent, and the appendix is usually found adherent to the ureter and kinking it. This explains the inability to introduce the ureter catheter, which in turn leads to the erroneous diagnosis of a concrement in the ureter. In the hematuria with acute appendicitis, the appendix is often found stretching backward and upward and the kidneys are the seat of intense congestion. This reflex congestion in the kidneys throws light on the mechanism of hematuria secondary to appendicitis, as both the appendix and the ureters are innervated from the abdominal sympathetic.

38. **Tubercle Bacilli in the Urine.**—Gautier declares that the Ziehl-Neelson technic may be regarded as absolutely reliable for tubercle bacilli in the urine provided the decoloration is done with extreme care with 33 per cent. nitric acid and with alcohol. The method requires much patience, long centrifuging, with plenty of fluid, and the slides must be examined all over. If the first examination gives negative findings, the procedure must be repeated with urine voided a few hours later. If a specimen stained with methylene blue shows red corpuscles, degenerated polynuclears, but no microbes, the search for tubercle bacilli must be resumed with renewed energy. The findings in twenty-eight cases are briefly summarized.

39. **Bladder Calculi in Northern Africa.**—Coudray lists the brief history of ninety cases in Mohammedans in northern Africa, including fifty children. The mortality was 11 per cent. but among the adults alone it was over 17 per cent. The first sign of the trouble in children is pain on micturition and sudden stoppage of the jet of urine. In men, the disturb-

ances are usually those accompanying chronic cystitis. As the patients are seldom seen until the lithiasis has caused more or less local disturbance, a suprapubic incision is generally necessary. A special advantage of this technic in this African region is that the calculus which is given the patient to take home is a most potent aid in winning the confidence of the native population, so that the operated send their friends for relief in an earlier stage.

Lyon Médical, Lyons

February 22, XLVI, No. 8, pp. 389-452

41 Neurasthenia with Involvement of the Meninges. C. Maurice.

Presse Médicale, Paris

February 21, XXII, No. 15, pp. 141-152

42 Mycosis in Man from Chalara; Two Cases. (La Chalarose.) H. Roger, A. Sartory and P. J. Ménard.
43 *Vaccine Therapy in Chronic Gonorrheal Arthritis. V. P. Sémionov.

February 25, No. 16, pp. 153-160

44 The Permanganate Test in Obstetric Cases. (La réaction de Moriz Weisz en obstétrique.) G. Keim and M. Vigot.
45 Improved Needle for Intravenous Injections. (Aiguille intraveineuse à obturation facultative.) R. Bayeux.
46 Reducing of Fractures. (La réduction en un temps des fractures de date récente.) D. de Frenelle.

43. **Vaccine Therapy of Gonorrheal. Arthritis.**—Sémionov states that six patients treated by him in 1912 with polyvalent antigonococcus vaccine found their chronic gonorrheal arthritis very much improved. For a clinical cure from eight to twenty injections of the vaccine are necessary, small doses at first, not over 0.2 or 0.8 c.c., at intervals of four or six days, and then gradually increasing the dose to 0.8 up to 2 c.c. with seven-day intervals. The discharge from the genital organs may become more profuse under the influence of the vaccine, and it extremely rarely happened that the gonococci disappeared from the genital secretions under the influence of the vaccine. The vaccine may induce diarrhea but no other untoward by-effects were observed. The relief from pain is an important effect of the treatment, and the continued use of the vaccine brings the temperature down to normal. The benefit from the vaccine is generally so marked that it serves to differentiate the gonorrheal origin of the joint affection in dubious cases.

Revue de Médecine, Paris

February, XXXIV, No. 2, pp 81-160

47 A New Function of the Vessel Walls: Transudation of Ferments. (Nouvelles sécrétions internes et nouvelle fonction des vaisseaux.) R. Lépine.
48 The Determination of Amino-Acid in the Urine after Giving Peptone as a Diagnostic Test in Insufficiency of the Liver. M. Labbé and H. Bith.
49 *The Antigen Reaction in Tuberculosis. (La réaction de l'antigène.) R. Debré and J. Paraf. Commenced in No. 1.
50 Nephritis and Hyperglycemia. A. Landan.

49. **The Antigen Reaction in Tuberculosis.**—Ordinarily in the complement-fixation reaction a known antigen is used to demonstrate the presence of antibodies in the blood or other body fluids. Debré and Paraf conceived the idea of using a known antibody to demonstrate the presence of an antigen in tuberculosis. A serum rich in antibodies was obtained by immunizing the horse against tuberculosis. The fluids used for examination are urine, sputum or exudates taken from local foci of tuberculosis. In cases where the bacilli themselves cannot be demonstrated, their products in the form of antigen may be thus demonstrated. They describe their technic in detail and tabulate the results in the examination of the urine from 155 patients. They conclude that the reaction is not only exact but of great practical value, its chief value being in differentiating tuberculosis of the urinary apparatus. If only one kidney is diseased the reaction is positive on that side and negative on the other. In chronic pulmonary tuberculosis it is generally negative. In acute tuberculosis it is positive. In nephritis it is positive if the condition is tuberculous in origin, otherwise negative. This reaction seems to be the only means for differentiating tuberculous from non-tuberculous orthostatic albuminuria. By its use a rapid diagnosis can be made of the tuberculous nature of pleural, peritoneal or joint fluids with tuberculosis, and in primary pleurotuberculosis it has given encouraging results in the examination of sputum and milk, but has not been satisfactory in the examination of cerebrospinal fluid or blood serum.

Semaine Médicale, Paris

February 25, XXXIV, No. 8, pp. 85-96

51 *Recurring Abdominal Colic in Children. (Douleurs abdominales et coliques ombilicales récidivantes chez les enfants.) L. Cheinisse.

Berliner klinische Wochenschrift

February 23, LI, No. 8, pp. 337-384

52 *Recurring Umbilical Colic in Children. H. Moro and J. K. Friedjung.
53 Cholera in Balkan Campaign. (Zur Diagnose und Therapie der Cholera asiatica.) R. Rosenthal.
54 *Keratin in Treatment of Cirrhosis of Liver. S. M. Zypkin.
55 *Tuberculosis, Bacillemia and Miliary Disease. E. Rautenberg.
56 Theoretical Explanation of the Abderhalden Reaction. U. Friedemann and A. Schönfeld.
57 Serum Sickness. (Zur Serumkrankheit.) F. C. R. Schulz. Concluded in No. 9.
58 Embryologic Study of the Blood. (Demonstration färbiger Mikrophotogramme nach Lumière zur vergleichenden Entwicklungsgeschichte des Blutes.) C. S. Engel.
59 *How Soon Can Patients Get Up After Operations? (Das Frühaufstehen nach Operationen.) W. Hofmann.
60 Serodiagnosis of Cancer and Tuberculosis. (Verwendung der Abderhalden'schen Reaktion bei Carcinom und Tuberkulose.) E. Fränkel.

51-52. **Recurring Abdominal Colic in Children.**—A communication on the subject of recurring colic in the region of the umbilicus was summarized in these columns recently, p. 971. The special features are the regularity of the attacks, that they are not accompanied by fever, and that the children thus affected are excitable and nervous, with unstable vasomotor system, and are being brought up injudiciously. Although the pains may suggest appendicitis, yet Moro does not regard the appendix as in any way responsible for them, while an ultimate cure can be brought about by diet and training, aided by suggestion. He cured the children completely in all his cases by a few suggestive measures such as painting the site of the pains with iodin, strapping it with plaster and giving belladonna or valerian or both internally. He has recently reexamined some of the children whom he had thus treated years ago, and found that the umbilical colic had never returned after his treatment. Most of the children are now in good health but some show signs of a general nervous instability. Küttner ascribes the whole trouble to the appendix, and has reported some cases in which a complete cure followed appendicectomy, but Moro asks what is the necessity for an operation when a few suggestive measures, application of electricity or strapping with plaster, answer the purpose equally well, as he shows by some new examples.

Friedjung states that he described the same set of symptoms in 1904 after a four-year study of these recurring colics in the umbilicus region. He attributes the trouble to hysteria. Differentiation of this manifestation of hysteria is important as it is speedily cured by appropriate treatment while treatment on the assumption of diastasis of the linea alba, entailing incarceration, is bound to fail as having no foundation in fact. The diastasis of the rectus muscles is a physiologic phenomenon in children. It is evident in about 63 per cent. of all children after birth and the diastasis and its frequency grow larger with increasing age. He reported thirty-seven cases of the kind then but remarks now that no one seemed to pay any attention to his article, and the syndrome has been "discovered" anew nine years later and ascribed to the appendix by one writer and to simple nervous excitability by another. Recovery is liable to follow any measure that impresses the little patient; appendicectomy, removal of adenoids or almost any therapeutic measure.

54. Summarized when it first appeared (in Russian). See The Journal, February 28, p. 740.

55. **Tubercle Bacilli in the Blood.**—Rautenberg reports clinical and experimental research which confirms anew the importance of the information to be derived from inoculation of animals in cases suspicious of tuberculosis and in which tubercle bacilli have been found in the blood. The findings with the microscope are unreliable.

59. **When Should Patients Be Allowed to Get Up after a Major Operation?**—Hofmann insists that in discussing

whether patients should be allowed to get up early after an operation or delivery, too little attention has been paid to the heart. The shock of the operation, the loss of blood and the anesthetic all cooperate to injure the heart muscle. This is the case even with a herniotomy or other small operation; and with local anesthesia the heart suffers from the operative shock and loss of blood. This injury of the heart can be detected and measured by the behavior of the pulse and blood-pressure before and after the femoral arteries are compressed by pressing on Poupart's ligament with the fingers. When the femoral arteries have thus been blocked in this way for from two and a half to five minutes, the blood-pressure in the finger runs up by 5 or 10 mm. mercury if the heart is sound or functioning normally, while the pulse persists unmodified or grows a little slower. If the heart is slightly incapacitated, the pulse and blood-pressure do not show much change. If the heart is seriously damaged, the blood-pressure drops while the pulse remains unmodified; if the heart is absolutely incompetent, the pressure drops and the pulse goes up. By this simple means it is possible to estimate the functional capacity of the heart before and after the operation and thus learn with precision to what lengths we can go. Of course if the heart has been seriously damaged, it is very hazardous to inflict such a strain on it as is involved in getting up soon after the operation. He cites a number of typical examples to confirm these statements. In one of the cases related the pressure and pulse before resection of the stomach had been 90 and 72 respectively; twenty-four hours after the operation the figures were 100 and 116, and after compression of the femoral arteries the pressure was 98 and then 90 while the pulse was 124 and then 132 by the end of two and a half minutes. The third day the pressure was found 115 and pulse 78; on compression of the femoral arteries the pressure kept at 115 but the pulse increased to 84 and 90. The heart was thus seen to have recuperated to a certain extent, and by the eighth day pressure and pulse were 80 and 78, and these figures were not modified by compression of the femoral arteries. That is to say, the heart behaved by the eighth day as it had before the operation, having required a whole week to get back to its condition prior to the resection. Hofmann has his patients exercise their limbs systematically while still in bed, and promotes the venous circulation with deep breathing, while he gives drugs to reduce the coagulability of the blood. By this means he wards off danger of embolism and heart failure. He does not approve of letting the patients get up before the eighth to the tenth day when the femoral-arteries sign described above points to danger.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

February 19, XVIII, No. 2, pp. 141-204

61 *Operative Treatment of Facial Paralysis of Peripheral Origin. D. G. Zesas.
62 *Cardiospasm and Fusiform Dilatation of the Esophagus. F. Geppert.
63 *Senile Osteomalacia. H. Schlesinger.

61. **Operative Treatment of Facial Paralysis of Peripheral Origin.**—Zesas has compiled from the literature seventy-three cases of chronic facial paralysis treated by nerve grafting. The results have been disappointing; no benefit was realized in over half the cases, especially when the muscles were already atrophied and had lost their electric excitability. Even in the cases regarded as successful, the improvement was meager and there were numerous annoying by-effects. Much better results have been obtained by plastic operations on the muscles; this technic has been applied in five cases to date, three in Roumania, by Gomoiu and Jianu; the other operations were by Lexer and Hildebrand. Zesas gives the particulars of the technic, as also of Busch's wire-loop and Stein's fascia-flap method. The latter takes a strip of fascia from the thigh, 20 cm. long by 2 cm. wide, and works it down through the cheek to the corner of the mouth and back again, thus suspending the sagging corner of the mouth in a sling hanging from the malar bone. Three weeks previously a small amount of paraffin had been injected under the skin at the corner of the mouth, to give a hold to the loop of fascia when it was passed around it. The outcome of the operation was satisfactory and has persisted unimpaired for a year to date in the case reported.

62. **Cardiospasm and Dilatation of the Esophagus.**—Geppert's article is a comprehensive study of 70 cases from the literature and 1 unpublished case. The patients were 39 men between 20 and 60; 21 women between 20 and 30; 3 approaching 45, and 8 children between 9 and 16. When treatment was commenced before there had been much debility from lack of sufficient food, 23 per cent. of the patients were cured by appropriate treatment, and 50 per cent. improved. The measures useful in treatment are mainly dietetic, rinsing out the esophagus with astringents, giving atropin and narcotics, feeding through a tube, and efforts to dilate the stenosis mechanically from above or below. Other operations that have been applied are resection of the lower segment of the esophagus or its enlarged wall; plastic operations on the cardia, and anastomosis between the stomach and esophagus. This compilation supplements Neumann's series of 70 cases in 1901. The details are tabulated.

63. **Senile Osteomalacia.**—Schlesinger analyzes fifty articles on this subject, remarking that the apparently regional occurrence of senile osteomalacia is probably due to the greater diagnostic skill of certain physicians. In a few cases on record, true generalized osteomalacia followed a local trauma. It seems to occur with unusual frequency among the insane, especially with dementia praecox, although there may be an interval of thirty-six up to sixty years after the first symptoms of the dementia. Demange has reported a case of osteomalacia in a man of 40 after trauma; he recovered, but it returned anew at 80. H. Curschmann has encountered at Mainz fourteen cases in five years. The affection generally begins with intense pain in the sacral region and throughout the skeleton of the trunk, gradually spreading over the whole body. At first there may be pain only on pressure, then with movement, and the patient notices that he has grown shorter. A characteristic gait develops, with or without contracture and changes in the pelvis.

The development may be rapid. Sternberg had one patient who became bed-ridden in a few weeks after the first symptoms. In contrast to its abrupt beginning, the chronic course may be long in developing and ten or twenty-five years may elapse before serious disturbances result. In differentiation, multiple tumors of the bones must be excluded. Multiple myeloma is more frequent in elderly men, and it may be accompanied by two symptoms seldom, if ever, encountered with osteomalacia, namely, albumosuria and signs of compression of the spinal cord. Other bone tumors entail progressive cachexia and anemia, and these are not encountered with osteomalacia. At first it may be difficult to decide whether the trouble is not a simple neuralgia. Schlesinger reports the details of four cases in which the osteomalacia had developed entirely without symptoms and was a necropsy surprise. Intermittent claudication may accompany senile osteomalacia. Curschmann noticed a tendency to vascular cramps in the hands and feet in five out of six cases, subsiding entirely as the osteomalacia was brought under control. Phosphorus seems to be the sovereign remedy, either in pills of 0.0005 gm. twice a day or a teaspoonful twice a day of a mixture of 0.01 gm. in 100 gm. of cod-liver oil. Curschmann has reported complete recovery under this treatment, but Schlesinger has only succeeded in obtaining marked improvement.

Deutsches Archiv für klinische Medizin, Leipsic

CXIII, Nos. 3-4, pp. 209-440. Last indexed Feb. 7, p. 497

64 Simulation of Heart-Block. (Ueber vorgetäuschten Herzblock.) L. Roemheld.
65 Analysis of the Electrocardiogram by Means of the Roentgen-kymograph. T. Becker.
66 Clinical Value of Determining the Concentration of the Blood. W. H. Veil.
67 Nitrogen and Mineral Metabolism in Scleroderma. (Stickstoff- und Mineralstoffwechseluntersuchungen bei Scleroderma diffusum.) A. Elfer and H. Geber.
68 *Testing the Functional Capacity of the Heart. (Zur Funktionsprüfung des Herzens.) J. Kahn.
69 Antipyretics. (Zur Kenntnis temperaturherabsetzender Substanzen.) R. von den Velden.

70 *Diagnosis of Uremia by Indican Content of Blood Serum, Transudates and Exudates. G. Dorner.
71 Temperature Curves in Leishman's Anemia in Children. G. Caronia.
72 Growth and Perforation of Aneurysms. P. Baetge.
73 *Effect of Hypophysis Extract on Human Blood Pressure and on Growth of Young Animals. E. Behrenroth.
74 Intra-Abdominal Pressure and the Distribution of Blood with Enteroptosis. E. Schulz.

68. **Testing Functional Capacity of the Heart.**—Kahn recommends v. Waldvogel's method of testing the heart function by measuring the systolic blood-pressure as the patient reclines, and then again as he stands. This method gives dependable results, is simple and can be used by any physician at the bedside, while most other methods are complicated and the results not uniform. Tables and curves are given showing the results in over fifty cases.

70. **Diagnosis of Uremia by Indican in the Serum.**—Dorner gives twenty-six case histories which confirm his belief that the appearance of indican in the blood serum is indicative of uremia. If it is present in large quantities in the blood, it may also be demonstrated in the pleural effusion or ascitic fluid, but not in the cerebrospinal fluid. It does not seem to have any toxic effect. In uremia caused by lack of functioning kidney tissue, there may not be indican in the blood. In marked indicanuria without kidney disease, there is not much indican in the blood serum. It is not certain that the liver is the source of the indican; it is probably partly formed by the kidney. The appearance of indican in the blood or transudates is generally a sign of approaching death, but patients with a slight indican content may improve.

73. **Effect of Extract of Hypophysis on the Blood-Pressure.**—Behrenroth found that the effect of hypophysis extract on the human blood-pressure was by no means uniform, and did not correspond to the striking results obtained in animal experimentation. His results confirm those of von der Velden in his research on the effect of hypophysis extract on the human kidney. The latter found there was no constant rise in *blood-pressure and no change in the pulse-rate.* The respiration-rate was not altered and there was no special effect on the general condition.

Deutsche medizinische Wochenschrift, Berlin

February 19, XL, No. 8, pp. 369-416

75 *Embolism in Pulmonary Artery. (Behandlung der Lungenarterienembolie und des Lungeninfarkts.) Grober.
76 *The Spleen as a Factor in Anemia. (Bedeutung der Milz bei anämischen Zuständen in Bezug auf Pathogenese und Therapie.) W. Türk.
77 *Splenectomy in Blood Diseases. (Die Blutkrankheiten und ihre chirurgische Behandlung.) R. Mühsam.
78 Febrile Intestinal Syndrome from the Bacillus Fecalis Alcaligenes. H. Straub and W. Krais.
79 *Neurasthenia in Lead Poisoning. S. Hirsch.
80 Metabolism of Cholesterol. (Zur Physiologie und Pathologie des Cholesterinstoffwechsels.) Baemeister and Havers.
81 Subconjunctival Injection of Hypotonic Salt Solution plus Instillation of Sedative Cures Subconjunctival Extravasation and Suggillation in the Lids. T. Mohr.
82 Technic for Local Electric Bath. (Heilwirkungen von Licht- und Wärmestrahlen.) C. Brill.
83 The Prophylaxis of Tuberculosis in Infancy. Eitler. Commenced in No. 7.

75. **Pulmonary Embolism and Infarct.**—Grober remarks that generally the exertion which was followed by the embolism was one in which the abdominal muscles were strained. especially *turning over without help in bed during convalescence* from a major operation, or movements of the arms or legs. Physical rest is therefore the main point in warding off further embolism if the patient has survived the first symptoms. The danger of embolism is an argument against allowing patients to get up soon after an operation on the pelvis; if a thrombus has already formed it is liable to be swept away by any physical exercise. The formation of new thrombi must be carefully prevented, the circulation promoted, and inflammation combated with ice and antiseptic dressings, or by resection of the inflamed segment of the vein if nothing else will answer. It often happens that the embolism is the work of a single loose portion of the thrombus; the rest may cling so tight that there is no further embolism. Camphor or ether may be necessary to tone up the pulse; the blood-pressure thus heightened may open new routes for the blood in the lungs. If the patient survives the first hour, his pain and distress must be relieved with morphin. This is particularly useful in case of embolism in the smaller branches of the pulmonary artery which often is accompanied by intense pain in the pleura. This can be combated with ice or mustard, cold water bandaging or wet cupping. These measures may relieve pleural pain from any cause, frequently rendering morphin unnecessary.

76. **The Spleen in Anemia.**—Türk discusses the present state of our knowledge in regard to the connection between the spleen and the blood-producing organs, also the clinical pictures which result when the spleen is pathologically active, and under what conditions we may expect benefit from removal of this source of active disturbance. He has encountered *several cases in which there could be no doubt that a tumor* in the spleen was responsible directly or indirectly for the production of toxins which had a decidedly injurious action on the bone marrow. The consequence of this toxic functional disturbance in the blood-producing apparatus was a kind of anemia with none of the features of hemolysis. The removal of the spleen does away with the source of the toxins in this case. The benefit from splenectomy in Banti's disease—which seems to be an anemia of this type—confirms this assumption.

The spleen may become enlarged in consequence of an old pylephlebitis which may be traced to infection of the umbilicus soon after birth. This may lead to hemorrhages from the enlarged veins in the gastro-intestinal mucosa, with severe anemia as the result. He has encountered a number of cases of this kind since the one he reported in 1902; there is nothing in the clinical picture or case history here to suggest that any toxic injury of the bone marrow may be responsible for the anemia or any process of hemolysis. Removal of the spleen under these conditions would be absolutely futile while it would be fraught with grave danger on account of the extreme congestion in the splenic vein. When there is excessive *destruction of blood in the spleen-liver system* there is no bile in the urine, but bilirubin is found in the blood, urobilin in large amounts in stools and urine and the bone marrow shows signs of hyperfunctioning. This familial hemolytic jaundice may in one member of the family cause merely enlargement of the spleen, without jaundice or much anemia; another may have the enlarged spleen, anemia and urobilinogenuria but no jaundice, and a third may have all the above but with less fragile reds. The same symptoms characterize the type which develops without any known inherited tendency. In one such case it came on in childhood after a septic scarlet fever. The exacerbations may resemble gall-stone trouble, and the anemia may assume the pernicious type during the exacerbations; they are inclined to be more abrupt than in the familial type. In all these hemolytic groups *the removal of the* spleen has *proved* the means of curing most if not all of both subjective and objective disturbances; only occasionally the reds may still display a certain fragility.

The results of splenectomy in such cases point unerringly to the spleen as the cause of the trouble, and show that any symptoms on the part of the liver can be readily explained as secondary to the spleen affection. This suggests that possibly splenectomy might help in morbid conditions *in which the* liver seems to be playing the more important rôle, and in fact this has proved to be the case with Hanot's cirrhosis of the liver with hypertrophy and recurring paroxysmal attacks resembling gall-stone mischief, but without anemia. Eppinger has reported several cases of a practical cure after splenectomy, and full earning capacity restored after long, serious illness for periods up to ten years.

With pernicious anemia, splenectomy induces a marked change for the better, but the blood does not return to the normal type; the patients are much improved but in none of the seven cases in which splenectomy has been done for pernicious anemia during the last ten months has the blood-picture returned to normal. But a remarkably rapid and thorough-going remission may almost be counted on in apparently almost moribund patients; it acts more rapidly than arsenic and as promptly as thorium, but it does not seem to remove the cause of the pernicious anemia. The morbid spleen functioning is merely one link in the chain of factors causing the disease, but by removing it we make a gap in the chain and even this is great gain.

77. **Operative Treatment in Banti's and Other Blood Diseases.**—Mühsam has found records of 29 European cases of Banti's disease treated with splenectomy; 5 of the patients died, 3 from infection and one from pneumonia or gastro-intestinal hemorrhage. All agree that done in time the operation can save the patient's life. The results from splenectomy have been surprisingly fine in the 14 cases on record in which it was done for hemolytic jaundice. He has a personal experience with 11 cases of pernicious anemia treated with splenectomy; 3 of the patients died, one young man and one young woman succumbing to the excessive hemorrhagic tendency accompanying the pernicious anemia. Two have died since, one from myelitis; the other patients are in good health to date. The blood-picture has improved in all but has not become normal. The patients gained materially in weight and strength.

79. **Neurasthenia from Lead Poisoning.**—Hirsch gives the details of seven cases out of a large number in his experience in which lead poisoning was responsible for affections of the central nervous system, mostly merely subjective disturbances. This lead neurasthenia, he says, is far the most frequent manifestation of lead poisoning, but the lack of specific characteristics has led to its neglect hitherto. He knows of no instance in which the neurasthenia has progressed to actual brain disease. Violent and protracted headache was the predominant symptom in four cases, and vomiting in the morning in three. Violent abdominal pain is also frequent, differing in many respects from lead colic. The patients may become depressed, irritable and timid. Except for exaggerated knee-jerk, the line on the gums, tremor of the hands, and dermographism, there were no somatic signs of trouble, and these were not always present. His article is based on considerable personal experience and the records of two painters' organizations, including nearly 2,000 individuals.

Deutsche Zeitschrift für Chirurgie, Leipsic

January, CXXVI, Nos. 3-4, pp. 213-428

84 *Post-traumatic Ossification in the Elbow. E. Lehmann.
85 Chronic Peritonitis with Adhesions. N. Kron.
86 Serodiagnosis of Staphylococcus Surgical Affections. (Verwendbarkeit der serologischen Staphylokokkenreaktion in der chirurgischen Diagnostik.) F. Rost and Saito.
87 Painful Pronation. (Subluxatio radii perannulare.) P. Erlacher.
88 Congenital Cyst in Side of Neck; Two Cases. (Zur Kasuistik und Therapie der angeborenen seitlichen Halsfistel.) Nobe.
89 Appendicitis; 295 Cases with .7 per cent. Mortality. H. Berger.
90 Prolapse of Intestine through Artificial Anus. (Ueber Darmvorfälle aus Kotfisteln und Kunstaftern, insbes. Zweihörnige.) M. Schmidt.

84. **Posttraumatic Ossification in the Elbow.**—Treatment gives poor results when the ossification has progressed to the point of causing severe functional disturbance. This renders prophylactic measures all the more important, especially keeping the arm quiet after the accident and applying moist heat and similar measures to promote the absorption of the extravasated blood in the region. Vigorous massage is of course contra-indicated as repose of the region is the main thing. Experiences with ossifying myositis have shown that it may be possible in this way to ward off ossification and induce the retrogression of circumscribed infiltrations which might otherwise lead to ossification. Puncture may aid in certain cases. Thiosinamin might be given a trial, possibly injected directly into the joint, although the danger must not be forgotten that this drug may loosen up and release hitherto encapsulated bacilli in some old focus in the lungs or elsewhere. The ossification process may retrogress spontaneously, so that operative treatment is called for only when there is severe functional disturbance or pressure on nerves. In Lehmann's 37 cases there had been a fracture in 11, merely dislocation in 20 and a possible fracture in 6. The cases are analyzed in detail with the Roentgen-ray findings. The patients were all soldiers and during the same period, 1902-1910, only 18 cases of ossification in other joints were encountered. In a further series of 6 cases the ossification in the elbow was clinically certain but not confirmed by roentgenoscopy.

Medizinische Klinik, Berlin

February 22, X, No. 8, pp. 313-356 and Supplement

91 *Mental Derangement with Internal Diseases. A. Pilcz.
92 Importance of Calcium for the Growing Organism. F. Lust.
93 Evolution of a Traumatic Neurosis. H. Stursberg
94 Multiple Tumors. F. Venulet.
95 Bouillon Cubes. (Bouillonwürfel.) J. Schlesinger.
96 Subsidence of Symptoms in Knee-Chest Position when Retroversion of the Uterus Can Be Cured by Fixation. H. Arndt.
97 Anatomy of the Internal Ear. (Ueber das schallempfindende Endorgan im Inneren Ohr.) J. Zange.
98 Present Status of Blood Diseases. (Neuere Forschungen und therapeutische Bestrebungen auf dem Gebiete der Blutkrankheiten. I.) F. Port.

91. **Psychoses with Internal Diseases.**—Pilcz remarks that recent research and the new biologic reactions have confirmed more and more the assumption that mental derangement is not exclusively a matter of the mind but that the mental trouble is merely one part of the general process affecting the entire organism. The psychosis may be complicated with organic disease of the brain or meninges, but as a rule there is no parallelism between the severity of the mental disturbance and the severity of the infectious disease to which it is secondary. It is remarkable that diphtheria is so seldom accompanied by psychic disturbances, and the same may be said of tuberculosis except for the moods and changes in character which may be encountered with almost any wasting disease. Optimism is common, while delirium and imbecility as a consequence of tuberculosis are extremely rare. When the patient refuses to eat, he should be fed by gavage, not delaying for more than three or four days. Insomnia and agitation are best combated by the continuous bath and bed rest, after the bowels have been thoroughly emptied and attempts have been made to sterilize them with creosote, the salicylates, menthol, etc., supplemented by saline infusion. If sedatives are absolutely necessary to combat insomnia, special care must be paid to intestinal functioning thereafter.

The psychosis or confusion liable to come on with chorea minor generally subsides under symptomatic treatment, but in the chorea of pregnancy it shares the grave prognosis of the latter. When conditions are becoming aggravated, the pregnancy should be terminated without delay. He discusses further the mental derangement which may accompany exophthalmic goiter and myxedema; in either case it yields to the specific treatment for each. Tetany has sometimes been accompanied by hallucinations and stupor, and symptoms suggesting tetany have been observed in catatonia and other actual psychoses. With extremely severe neuralgia, the pain may induce a condition tending to delirium and morbid dread. This neuralgic dysphrenia subsides as suddenly as it came on when the attack of neuralgic pain is over. An injection of morphin may work wonders. The psychoses observed with diabetes are generally mere casual coincidences but sometimes the condition improves or becomes aggravated parallel to the rise or drop of the output of sugar. Psychoses have also been observed in leprosy, osteomalacia, trypanosomiasis and hypophysis disease. In conclusion Pilcz discusses the influence on mental derangement which may be exerted by an intercurrent febrile affection. Many instances are known in which the beneficial influence of such an occurrence survived the intercurrent fever and persisted so that persons deemed incurably demented have been able to have their legal rights restored. The febrile affections which seem most potent in this line are those from streptococci and staphylococci. This experience, he adds, is the basis for Wagner von Jauregg's method of treating progressive paralysis with tuberculin, given to induce febrile reactions; it already has a record of highly satisfactory results. Pilcz suggests that dementia praecox may possibly prove amenable to this form of treatment as also curable psychoses which are threatening to become chronic. By the time patients in such cases reach the asylums it is generally too late for treatment of such psychoses to be effectual. The fate of the patient therefore lies in the hands of the gener practitioner who sees him first, and therapeutic efforts along the above lines may yield unexpectedly satisfactory results.

Münchener medizinische Wochenschrift

February 24, LXI, No. 8, pp. 401-546

99 Improved Technic for Serodiagnosis. (Spezifische Wirkung der sogenannten Abwehrfermente.) E. Abderhalden.
100 Proteolytic Ferment in Blood in Inanition. (Auftreten eiweissspaltender Fermente im Blut bei vorgeschrittenem Hunger im Stadium der "Stickstoffsteigerung aus Fettschwund.") E. Heilner and F. Poensgen.
101 *Staphylococcus Sepsis; Eight Cases. L. Jacob.
102 *Thyroid Insufficiency in relation to Nervous Disturbances and Spastic Constipation in Women. E. Sehrt.
103 *Erysipelas as a Factor in Diabetes. A. Welz.
104 Anemia of Pregnancy. (Zur Kenntnis der Schwangerschaftsanämie.) P Jungmann.
105 A Single Inhalation of Volatile Oil of Mustard Relieves Toothache and Earache. (Ein sehr rasch und sicher wirkendes Riechmittel gegen Zahnschmerzen und Ohrenschmerzen.) A Schwarz.
106 Persisting Thyrolingual Duct as Cause of Cough. (Husten ausgelöst vom persistierenden Ductus lingualis.) A. Strauch (Chicago).
107 Polyneuritis with Korsakoff's Psychosis after Salvarsan, Terminating Fatally. R. Pürckhauer and T. Mauss.
108 Grape Juice. (Traubensaft als Nahrung und als Heilmittel.) G. Bender.
109 Technic for Serodiagnosis and Its Value. (Verwertbarkeit des Dialysierverfahrens bei klinischen und serologischen Fragestellungen.) H Oeller and R. Stephan.
110 Present Status of Resuscitation of the Apparently Dead. (Scheintod und Wiederbelebbarkeit im Lichte der neuen Forschungen.) F. Kuhn.

101. Staphylococcus Sepsis.—Jacob has encountered in the last two years eight cases in only three of which the course was of the classic type with osteomyelitis, a paranephritic abscess and severe bacteriemia. In the others, the primary focus was in the tonsils, the intestines or bronchiectasia, and there was no suppurative metastasis which is the rule in 95 per cent. of such cases. Two of the patients died. This experience teaches the importance of bacteriologic examination of the blood and urine in dubious febrile cases, and shows that if it were more of a routine procedure mild forms of sepsis might be discovered oftener.

102. Thyroid Insufficiency in Connection with Nervous Conditions and Spastic Constipation in Women.—Sehrt reviews nine cases of nervous disturbance accompanying hemorrhagic uterine affections, which he ascribed to defective functioning of the thyroid and treated with thyroid extract. Also eight cases of nervous disturbance accompanying retarded development of the internal genitals. The benefit from the thyroid treatment was constant and marked, the results so striking that he thinks they can be explained only on the assumption that the neuralgias and other nervous disturbances were due to excessive irritability of the nerve terminals which had gradually developed under the influence of protracted auto-intoxication from lack of normal thyroid functioning. This auto-intoxication may be the direct result of the thyroid deficiency or may be merely promoted and increased by it; in either event thyroid treatment has a distinct causal efficacy.

103. Erysipelas and Diabetes.—Welz reports a case in which a merchant of 52 convalescing from severe erysipelas of the face with slight participation of the heart, kidneys and liver in the infection, developed diabetes which gradually subsided again so that the urine was free from sugar by the twenty-fifth day. It reached 5.8 per cent. at one time. In a second case the diabetes had come on likewise during convalescence from severe erysipelas of the face; the patient was a previously healthy man of 49. The erysipelas had kept him in bed for four weeks and the diabetes following it proved fatal by the end of the sixth month. Severe organic changes were evident in both pancreas and liver at necropsy. There must have been some congenital predisposition to diabetes in these cases, he thinks, which was fanned into a flame by the severe erysipelas; without it or its equivalent the patients might have escaped the diabetes.

Therapeutische Monatshefte, Berlin

March, XXVIII, No 3, pp. 157-228

111 *Gynecology and the General Practitioner. M. Traugott.
112 Standardization of Digitalis. (Physiologische Wertbestimmungen einiger Digitalispräparate.) A. Lehnert and O. Loeb.
113 Local Application of Caustics to the Interior of the Uterus. (Ueber intrauterine Aetzungen.) W. Zangemeister.
114 Automassage of the Abdomen. (Instrumentelle Bauchmassage.) S. Auerbach.
115 Almond Milk as Vehicle for Emulsions. (Eine neue Methode der Emulsionsbereitung für die Behandlung der Magendarmaffektionen der Kinder.) M. J. Breitmann.
116 *The Work of the Council on Pharmacy and Chemistry. (Der pharmazeutisch-chemische Ausschuss des Amerikanischen Aerztebundes.) W. A. Puckner (Chicago).
117 *The German Council on Pharmacy and Chemistry. (Die Arzneimittelkommission des deutschen Kongresses für innere Medizin.) W. Heubner.

111. The General Practitioner and Gynecology.—Traugott remarks that specialist skill may be necessary for minute examination by palpation for gynecologic operations and radiotherapy, but that the general practitioner often has it in his power to ward off gynecologic disease and to cure a vast number of gynecologic disturbances which are really of psychic origin or in which the disturbances from some organic lesion elsewhere are erroneously ascribed to the genital organs. The progress which has been realized in conservative gynecologic treatment of late years has been in the restriction of the use of local measures, curetting, cauterizing, massage, pessaries, hydrotherapy and electrotherapy. These measures are being used less and less and attention and treatment are being applied to the unstable nervous system as a whole. Dubois' method of psychotherapy has an extremely wide field of application in gynecology, and here the general practitioner reigns supreme. It offers a well-founded, causal treatment of the psychogenic functional disturbances which seem to be becoming more numerous every day. The confidence in the physician is the main factor in the cure, and it is immaterial for the Dubois method whether the physician is a specialist gynecologist, an alienist or merely the trusted family physician. This method utilizes the influence of the mind over the body, the reaction of somatic processes to mental impressions, and it seeks to correct the mental impressions and render them sound and wholesome. If the patient is once convinced that her "leukorrhea," her vaginism, her various pains in the genital region, etc., are merely the manifestations of an overexcitability of her nervous system which in turn is the consequence of a morbid mode of thought and life—once convinced that this is the case and that her genital organs are sound and are merely being played on by her irritable nerves, the patient learns to look on them with indifference, and lo, they disappear. Training her to rise above envy, grief, jealousy, worry, etc., teaching her to see things in their true perspective and develop a stoical habit of mind, free the mind from the old emotional strains and tempests. This soothes it, reduces its irritability and puts an end to the disorders which this entailed. Among the functional disturbances amenable to this treatment he cites disturbances of all kinds in menstruation and secretion; sensations of prolapse when all is in its normal place; pains of all kinds in the pelvic region, and sensory disturbances causing sensations of distention of the abdomen simulating a pregnancy. The innervation of the abdominal muscles may become so irritated that labor contractions may be set up and abortion be induced purely from psychogenic influences. Of course the indispensable prerequisite to successful psychotherapy is the exclusion of organic disease.

116. The Council on Pharmacy and Chemistry of the A. M. A.—Puckner describes the work and aims of the Council and relates what it has accomplished in this country and suggests how a similar work might be successfully carried on under the conditions prevailing in Germany.

117. The German Council.—Heubner describes the German commission founded in 1911 for a purpose similar to that of the Council of the A. M. A., but he laments that the work of the commission has met with so much passive or active resistance in and outside of the profession that the results accomplished to date do not repay in the remotest manner the efforts expended. The generals alone cannot win a battle, he declares; when the troops hang back or go the other way there is not much hope for a victory. He draws an impressive picture of the evils which the present intolerable conditions have bred.

Wiener klinische Wochenschrift, Vienna

January 29, XXVII, No. 5, pp. 93-116

118 Exophthalmic Goiter as Contra-Indication for Roentgenotherapy in Gynecology. E. v. Graff.
119 Experimental Anaphylaxis from Intravenous Injection of Chemicals. (Ueber anaphylaxieähnliche Vergiftungserscheinungen bei Meerschweinchen nach der Einspritzung gerinnungshemmender und gerinnungsbeschleunigender Substanzen in die Blutbahn.) B. Busson and P. Kirschbaum.
120 Chemotherapy in Tuberculosis. H. Pohl.
121 Pathogenesis of Nephritic Edema. L. Pollak.
122 *Housing Reform. (Wohnungs-Reformbewegung.) E. Hofmokl.*
123 Medical Ethics. (Aerztliche Pflichtenlehre.) E. Finger.
124 *Priority as to Discovery of Protective Ferments. E. Abderhalden and F. Hamburger.

February 12, No. 7, pp. 141-168

125 Pathogenesis of Exophthalmic Goiter. F. Chvostek.
126 Symptoms of Pseudoleukemia Following Tick Bite. W. and R. A. Haberfeld.
127 Correction of Stiff Elbow. (Zur Mobilisierung des ankylotischen Ellbogengelenkes.) D. Pupovac.
128 *Reduction of Abnormally Fat Abdomen. (Zur Reduktion des Bauchdeckenfettes.) Vesco.

124. **Priority in the Protective Ferments.**—Hamburger claims that he called attention years ago to the essential facts on which Abderhalden's serodiagnosis is based, and accuses Abderhalden of having suppressed all reference to his previous work in this line. Abderhalden replies by crediting the actual priority in the idea to Huppert, whose work on the conservation of specific properties was published in 1896, while Hamburger's dates from 1903.

128. **Removal of Fat from Abdominal Wall.**—Vesco removed wedges of fat from the anterior abdominal wall to a total of over 13 pounds in the case of an otherwise healthy man of 25 who had been previously materially annoyed and impeded in his business by his large girth. The operation was complete *in thirty-five minutes and the patient made a rapid and* smooth recovery and is delighted with the improvement in his appearance.

Zeitschrift für Urologie, Berlin

February, VII, No. 2, pp. 81-160 and Supplement

129 Congenital Cysts of the Raphe of the Penis. G. Fantl.
130 Spiral Spring Guard for Catheter. (Ueber Metallspiralen zum Pezzer-Katheter.) J. P. Haberern.
131 Nephrectomy with Bilateral Renal Tuberculosis. R. Bachrach.
132 The Prognosis in Nephritis. H. Hohlweg and H. Strauss.
133 Vaccine Therapy in Urology. R. Volk and others.
134 Enlargement or Atrophy of the Prostate. P. Steiner and others.

Zentralblatt für Chirurgie, Leipsic

February 28, XLI, No. 9, pp. 369-416

135 *Buried Tampon to Plug Hole in Thoracic Duct. Dobbertin.
136 *Reflex Disturbances Elicited from the Pleura. D. G. Zesas.
137 *Autodrainage of Ascites into the Bladder. (Ventilbildung an der Harnblase zur Ableitung der Ascitesflüssigkeit.) P. Rosenstein.

135. **Buried Tampon to Plug Fistula into Thoracic Duct.**—Dobbertin removed a large sarcoma in the left supraclavicular fossa, suturing afterward over a drain. The fifth day, when all seemed to be doing well, chyle poured out through the drain in large amounts, disclosing injury of the thoracic duct which had caused no disturbance at first on account of the ligation. No measures stopped the flow, tight tamponing, plaster strips drawn tight or folding in the skin and suturing —all were futile, and the bed was kept wet with the seeping through the dressings and the patient by the fourth day was almost exhausted. Dobbertin consequently opened the whole incision anew. The patient was too weak for any search for the duct in the depths of the granulating tissues. He consequently rolled up five tampons of ordinary cotton, each about the size of a nut, wrapped them in gauze and pushed the whole in deep toward the point whence the lymph was streaming out. He then sutured the fascia solidly over the tampon, with catgut, with a running suture above, suturing the skin with silk. Not a drop of lymph escaped thereafter. The wound healed without fever and the tenth day the bunch of tampons was removed through a small opening made in the lower end of the incision. In a few days all had completely healed and the patient rapidly recuperated.

136. **Reflex Action from the Pleura.**—Zesas comments on the fact that injury of the lungs is rarely discovered to explain the disturbances which some ascribe to air embolism and others to reflex phenomena set up by injury of the pleura. He thinks these pleurogenous reflexes are much more frequent than the air embolism cases, even accepting the existence of the latter. Consequently, he emphasizes the necessity for morphin to deaden the nerves in the region before attempting any intervention involving the pleura. He cites two cases in which during an operation for empyema under general anesthesia the patients died *suddenly—without convulsions.* Whether these fatalities can be explained by pleurogenous reflex action is a question; the patients were both much debilitated children with purulent pleurisy.

137. **Drainage of Ascites into the Bladder.**—Rosenstein gives an illustrated description of a method with which he formed a kind of valve opening into the bladder permitting the accumulating fluid to drain away automatically through the bladder. His patient was a woman of 62 with cirrhosis of the liver and recurring ascites since 1911. About once a week she had to be tapped and nearly 10 liters of fluid withdrawn. He first made an Eck fistula but it had only transient effect. Then omentopexy was done but no benefit followed. Finally, on the patient's insistence, after warning of the possible dangers, he made a valve opening into the bladder which permitted the entrance of fluid into the bladder but did not allow any reflux as otherwise there would have been infiltration of urine and *inflammation. He exposed the entire bladder and placed a* silver ring, 3 cm. in diameter (about twice as large as an ordinary wedding ring), on the top of the bladder, drawing the bladder wall up through the ring into a peak which was then cut. The bladder tissue was turned back over the ring all around and sutured to hold the ring in place, the serous surfaces alone in contact. The bladder thus opened like a jar into the abdominal cavity. Then a strip 4 cm. wide was cut out of the wall of the bladder below the sutured-in ring. The excised strip included both serosa and muscle so that nothing was left of the bladder wall all around at this point except the mucosa lining of the bladder. The edges on each side of the excised strip were then drawn up together and sutured together all around the bladder. This forced the mucosa that had bridged the gap to fold inward all around; no stitches were taken in the mucosa at any point. Ascitic fluid promptly drained into the bladder and was voided with the urine while the cystoscope confirmed that the valve thus formed prevented any reflux of fluid. The operation has been a success although not as complete as had been hoped as all the ascitic fluid does not escape this way; some accumulates below the level of the opening in the top of the bladder. The patient has had to be tapped recently on this account; although eight weeks had elapsed, the total amount of fluid was not more than what had previously been drawn once a week.

Zentralblatt für Gynäkologie, Leipsic

February 28, XXXVIII, No. 9, pp. 329-360

138 Duration of Pregnancy. (Schwangerschaftsdauer.) Peters.
139 Diagnosis of Intra-Uterine Death of Twin. (Zur Kenntnis [illegible] Halban.
140 [illegible] during Pregnancy. [illegible] in der Schwanger-

Gazzetta degli Ospedali e delle Cliniche, Milan

February 22, XXXV, No. 23, pp. 233-248

141 Ileus from Meckel's Diverticulum. G. Baroni.

Policlinico, Rome

February, XXI, Surgical Section No. 2, pp. 53-104

142 Actinomycosis of the Cecum. (Actinomicosi appendiculocecale con psoite e metastasi al fegato.) G. Paganelli.
143 Endothelioma of the Bladder. (Linfendotelioma della vescica.) A. Vecchi.
144 *Decapsulation of the Kidney. (Sullo scapsulamento del rene.) E. Lay.

144. **Decapsulation of the Kidney.**—Lay reports experiments on three dogs treated with methylene blue and three others with potassium iodid, all after decapsulation of one kidney. The ureter had been cut out from the bladder about two weeks before and sutured to the skin, and copious diuresis had been induced later by intravenous injection of a 30 per cent. solution of glucose or its equivalent. The results

observed confirm the assumption that decapsulation of the kidney does not affect its functioning nor its permeability, the kidney pursuing the even tenor of its way apparently undisturbed after decapsulation. Even when excessive functional demands were made on the decapsulated kidney, it continued functioning apparently as satisfactorily as its sound mate.

Riforma Medica, Naples

February 14, XXX, No. 7, pp. 169-196

145 Hydriodic Acid in Treatment of Certain Surgical Lesions. L. Raffaele.
146 Leishmaniasis in Man and Dog. Spagnolio.

February 21, No. 8, pp. 197-224

147 Gastric Cancer; Present Status of Diagnosis and Treatment. Marenduzzo
148 *Diet and Kidney Functioning in Chronic Nephritis. A. Crosa. Commenced in No. 7.
149 *Colon-Bacillus Abscess in the Prostate.* G. D'Aloia.
150 Vaccine Treatment in Tuberculosis. A. Bruschettini.

148. **The Kidney Functioning in Chronic Nephritis.**—Crosa gives the details of extensive research in ten cases of chronic nephritis to determine the influence on kidney functioning of a meat diet and other factors. The results show that a moderate amount of meat is not injurious in such cases, whether the nephritis is of the chronic interstitial type or of the subacute or chronic parenchymatous type. The results of the findings with the various functional tests applied did not always harmonize. It is evident that even with all the progress in modern diagnostic methods, the most valuable information is still as ever to be derived from the quantity, specific gravity and sediment in the urine and its albumin content.

Rivista Ospedaliera, Rome

February 15, IV, No. 3, pp. 117-172

151 Bradycardia from Digitalis. N. Sforza.
152 Technic for Intramuscular Injection of Calomel. C. Rühl.

Brazil-Medico, Rio de Janeiro

February 8, XXVIII, No. 6, pp. 51-60

153 *Correction of Femoral Hernia through the Inguinal Canal. (Da via inguinal na cura das hernias cruraes.) C. Werneck.

153. **Radical Cure of Femoral Hernia Operating through the Inguinal Canal.**—Werneck reports the case of a man with right epigastric, inguinal and femoral hernia. He corrected the femoral hernia by way of the inguinal canal, ligating and fastening by the Barker technic, treating the hernia otherwise by Bérard's "double curtain" method. The advantages of the technic followed were so striking in this case that he wonders why every one does not treat femoral hernia by the inguinal route as the routine technic. It permits the sac to be ligated much higher up, the advantages of which are obvious. It also does away with the long funnel of peritoneum left inevitably when the herniotomy is done entirely in the femoral region. With the latter technic the wall is much less solid than it can be made when working through the inguinal canal which permits other muscles to be drawn down to reenforce the wall. Another advantage of the inguinal route is that it permits at the same time measures to ward off inguinal hernia later; it is a frequent occurrence that persons who have been operated on for femoral hernia by the ordinary incision below Poupart's ligament develop inguinal hernia later.

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154 *Action of Poisons on the Coronary Vessels of the Heart. N. Kravkoff.
155 *Test for Typhoid Bacilli in Water. G. D. Bielonovsky.
156 Arsacetin Glycosuria. B. M. Hmelnitzky.

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157 Technic for Wassermann Test. A. A. Melkikh.

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158 *Prognosis in General Anesthesia. V. A. Stange.
159 *The Importance of Vitiated Air in the Etiology of Anemia. S. F. Krotkoff.

154. **Action of Poisons on the Coronary Vessels of the Heart.**—Kravkoff studied this question on the hearts of rabbits, using the Ringer-Locke fluid. He found that epinephrin (1:5,000,000, or 1:500,000) does not cause any marked contraction, but rather a dilatation of the cardiac vessels. Caffein and theobromin induce considerable dilatation, while contraction follows application of nicotin, pilocarpin, barium and histamin. The vasoconstricting action was less manifest than in the peripheral vessels, but the vasodilating action proved to be much more pronounced on the cardiac vessels than on the peripheral. This shows that the nervous system of the coronary vessels contains predominantly vasodilators, the vasoconstrictors being derived exclusively from the vagus nerve.

155. **Test for Typhoid Bacilli in Water.**—Bielonovsky used an agglutinating serum for detection of typhoid bacilli in river water. Two liters (4.2 pints) of water were mixed with enough agglutinating typhoid serum (titrated 1:1,500) to make a strong titrated serum of 1:100. For this purpose he added 2 gm. of dry serum, previously dissolved in physiologic salt solution. The mixture was placed in a thermostat at 37 C. Twenty-four hours later the supernatant fluid was decanted and the sediment spread on the culture medium of Drigalsky-Conradi. With this method he succeeded in detecting the typhoid bacilli in very great quantities in different sources of the water-supply of the town Reval in Russia. Bielonovsky considers this method, which is a modification of the Vindelbandt-Shepilefsky technic, much superior to other methods. With others, the presence of typhoid bacilli in the water could be proven only twenty times, while in more than 5,000 tests these methods failed.

158. **Prognosis in General Anesthesia.**—Stange emphasizes anew that the condition of the heart is the best indicator of the patient's ability to stand chloroform or ether general anesthesia. The death-rate for the former is 1:1,000 or 2,000; for the latter 1:4,000 or 5,000. To determine the condition of the cardiac muscles, he recommends the so-called respiratory test, that is, the ability to abstain from breathing for some time. This is for a healthy person 30 or 40 seconds, while a person with a weak heart muscle can hold his breath only for 10 or at most 20 seconds. The test is very simple. The patient, sitting, makes a deep inspiration and closes his mouth, the nostrils being slightly compressed to avoid involuntary expiration, and while the patient is requested to refrain from breathing as long as possible, the seconds are counted. These experiments showed that in pulmonary tuberculosis his patients could remain 25 seconds without breathing; in chronic bronchitis, 28 seconds; with emphysema of the lungs, 24 seconds; with mitral insufficiency, 22 seconds; and with mitral stenosis, 20 seconds; stenosis of pulmonary artery, 28 seconds; aortic insufficiency, 15 seconds; chronic myocarditis, 17, and with aortic aneurysm, 10 seconds. Stange recommends this test in every case before starting an operation, and if the patient cannot abstain from breathing for more than 20 seconds, local anesthesia should be used, or, if the operation is not urgent, the general condition of the patient and his heart ought to be improved first. He also states that some American insurance companies do not consider a candidate a good risk if he has a respiratory test below 40.

159. **Importance of Vitiated Air in the Etiology of Anemia.**—Krotkoff found from his experiments on rabbits that they can bear with impunity considerable polluted air, with 8 or 10 per cent. of carbon dioxid, the blood remaining normal, but with loss of weight, provided the animals are healthy. The rabbits were then rendered anemic by injection of phenylhydrazin which reduced the hemoglobin to 15 or 30 per cent., the number of reds to 1,050,000. Three rabbits were kept in the open air and three in boxes closed up for two months. In both series the hemoglobin and red count became normal; the white count remained unchanged. Krotkoff thinks that vitiated air can cause anemia in human beings only when there is some predisposition on the part of the blood-making organs to disease. Otherwise the bad air of prisons, workshops, etc., causes only pseudo-anemia, that is, pallor of the integument but with no changes in the blood.

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160 Unilateral Paralysis of Sympathetic and Several Cranial Nerves. V. Christiansen.
161 Action of Ionized Air. (Paavirkes det menneskelige Legeme af ioniseret Luft og ad hvilke Veie? T. Brinch.